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LONG-TERM THERAPY IN THYREOTOXICOSIS WITH METHYL THIOURACIL.

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IN THE MEDICAL JOURNAL OF AUSTRALIA of July 26, 1947, at page 93, a report on "Control of Thyreotoxicosis by Methyl Thiouracil" was made on an analysis of 84 cases, which were presented with relevant detail. This present report includes these 84 cases with an additional 116 cases, making a total of 200 in 163 of which treatment with methyl thiouracil has been concluded. These figures do not include the 120 patients treated with thiouracil and referred to in the report of July 26, 1947. No patients treated by short-term therapy in preparation for operation have been included, although these number just over 400, and although many of them were suffering from acute primary thyreotoxicosis with large hyperplastic thyroids which had been present for some time and were unlikely to resolve. The majority of these short-term cases are cases of toxic adenoma, and pre-operative treatment takes on an average from eight to twelve weeks; but in any cases of chronic thyreotoxicosis, especially when the patient is aged over forty-five years, a Quick's hippuric acid excretion test is always carried out before operation is decided upon, as a minimum of 70% is necessary for safety. Patients adequately prepared with "thio" drugs and iodine for two to three weeks prior to operation cause no anxiety, and to date the mortality rate has been nil. It is necessary to guard against myxedema, and a basal metabolic rate of -15% is taken as the lowest level for operation; if it is below this, one should give *Thyroideum Siccum* until a reasonable level is reached.

At times it is difficult to tell whether a patient has an adenomatous gland until treatment has induced resolution of the surrounding hyperplasia. This is one reason why sixteen cases of toxic adenoma have been included in the

long-term therapy series, other reasons being the patients' reluctance to submit to surgery, or the fact that they are "bad surgical risks" because of low excretory function of the liver, severe hypertension, advanced years *et cetera*. Five of the patients in the long-term therapy series of toxic adenoma cases have finally consented to operation, as once the toxicity is controlled they seem to gain confidence. Once again it should be stressed that all adenomatous conditions of the thyroid should be treated surgically, provided the patient's general condition permits and he assents to it.

The same grouping of patients into five classes as recorded in previous articles has been adhered to in Table I. In the assessment of results, the grade "excellent" means that the patients have been restored to normal health without any obvious signs of their old thyreotoxicosis; but if an enlarged gland or prominence of the eyes persists and their condition is normal otherwise, the result is classed as "good".

Results.

The three classes of acute primary thyreotoxicosis taken together total 166 patients, consisting of 13 males and 153 females, of whom 135 have completed treatment, many of them two years or more ago, and all have been checked recently so as to be certain about results. Of these, 122 or just over 90% have shown a complete remission of their thyreotoxicosis, although nine of them have subsequently desired or have been advised to undergo operation so as to get rid of a persistently enlarged gland.

Of the sixteen patients with toxic adenomatous thyroids submitted to long-term therapy, it will be seen that only five are under the age of fifty years, and of these three have come to operation and one is awaiting it. The results have exceeded anticipation as regards control of toxicity in all these cases, although they require a much longer period of treatment and maintenance dosage than do those with acute hyperplastic glands. As was previously noted in the earlier series, the results with Class V recurrent thyreotoxicosis have been very successful, as

TABLE I.

Class.	Numbers and Sex.		Treatment Concluded.	Treatment Continuing.	Results.				
	Male.	Female.			Excellent.	Good.	Poor.	Relapsed.	Operated On.
I. Under 25 years ..	0	31	23	8	21	1	0	0	1
II. 25 to 45 years ..	6	87	77	16	53	14	4	7*	14†
III. Over 45 years ..	7	35	35	7	28	5	1	2	1
IV. Toxic adenoma ..	1	15	15	1	0	15	0	0	5
V. Recurrent ..	3	15	13	5	9	3	1	0	0
Total ..	17	183	163	37	111	38	6	9*	21

* Nine wished operation for cosmetic reasons, although toxicity was fully controlled; two were operated on after febrile reactions, two after a relapse and one with old colloid goitre.

† One during maintenance, others after cessation of treatment.

twelve out of the thirteen patients who have completed treatment have had definite remission which has lasted for long periods. If all classes are taken, a total of 163 patients have completed treatment, and of these 149 or 91.4% showed satisfactory remission of their thyrotoxicosis. All those continuing treatment, numbering 37, have shown an "adequate response"—that is, a reduction in the basal metabolic rate to a zero or minus figure, and they are included because they have passed the stage when reactions usually occur, are on maintenance therapy, and experience has shown that the ultimate result should be satisfactory.

Toxic Effects.

Toxic effects have been relatively few in number in the 200 cases now reported. A macular rash has occurred on four occasions, but cleared within thirty-six to forty-eight hours when the drug was withheld. Several cases of mild erythema have been noted, but were of no import. In four cases some enlargement of the salivary glands occurred, but treatment was carried on and the enlargement cleared in seven to ten days. Febrile reactions occurred in six cases, and in one was followed by exfoliative dermatitis (Case 27 already reported). In two others it recurred immediately on the recommencement of therapy after some four days' lapse, so operation was carried out. In the other three cases the reaction was mild and did not recur on the resumption of treatment.

One case of agranulocytosis has been met with, although in nine cases neutropenia was noted; but this was satisfactorily treated by liver extract and pyridoxine. The case referred to was Case 105 in Class V.

Miss D.A., aged forty-seven years, was operated on for a long-standing toxic goitre in 1938. The symptoms recurred in March, 1947, and in nine months she lost forty pounds in weight with the usual symptoms of acute thyrotoxicosis. Her basal metabolic rate on December 17, 1947, was +52%, and her local doctor was advised as to the treatment. On February 4, 1948, a report came by telephone that her basal metabolic rate was +49% and that the leucocytes numbered 4000 per cubic millimetre, but no toxic changes were noted. The administration of liver extract and pyridoxine was advised. On February 26, 1948, the leucocytes numbered 8000 per cubic millimetre and on March 16 the figure was also 8000. On April 16 her local doctor telephoned to say that she had been ill for about a week with acute pyelitis and a temperature up to 105° F. with rigors. The methyl thiouracil treatment had been stopped and she was given sulphadiazine. Advice was given to stop this at once and to get her into hospital for an urgent leucocyte count. Her leucocytes numbered 1500 per cubic millimetre and there were no neutrophilic cells to be seen. Penicillin, pyridoxine and "Pentnucleotide" were given, and twelve hours later the leucocytes numbered 3550 per cubic millimetre, 8% being neutrophilic cells. Next day the leucocytes numbered 3500 per cubic millimetre, 73% being neutrophilic cells, and after that the count rose rapidly. Deep X-ray therapy has been advised.

The occurrence of agranulocytosis as late as the seventeenth week of treatment is unusual, as the average

time seems to be between the fourth and eighth weeks. The administration of one of the sulphonamide drugs to a person who has been taking a "thio" compound was a serious error.

An initial neutropenia is by no means uncommon and examples may be seen in Case 87 (43% neutrophilic cells), Case 93 (38%), Case 94 (33%) *et cetera*; but in these cases as a rule the total leucocyte count is 5000 per cubic millimetre or over. Occasionally one meets with a relative leucopenia, as in Case 127 (4200 leucocytes per cubic millimetre and 42% neutrophilic cells) and Case 156 (4650 leucocytes per cubic millimetre and 32% neutrophilic cells). In such cases one naturally feels somewhat apprehensive, and it is as well to give liver extract and watch the leucocyte count carefully for the first eight or ten weeks of treatment. The danger level selected is a fall of leucocytes to 4000 (or under) per cubic millimetre and neutrophilic cells numbering 40% or less; if this occurs, treatment should be suspended. An initial eosinophilia is seen occasionally—for example, Case 27 and Case 87, in which the proportions were 11% and 14% respectively—and as was remarked in an earlier article, one regards such cases with the suspicion that some form of allergy may be present so that the patients may be more prone to reaction. It is surprising to find that many patients with thyrotoxicosis have some form of asthma, and the latter will diminish or may disappear if the thyrotoxicosis is controlled either by operation or with a "thio" compound. In twelve cases the eosinophilic proportion was raised to 10% or over, but generally it fluctuates and does not remain high. It is reassuring to find eosinophilic or basophilic cells present when there is a relative neutrophilia, as the observation denotes healthy bone marrow.

General Remarks.

There were sixteen patients with auricular fibrillation, and in all of them normal rhythm returned once thyrotoxicosis was controlled and they were kept on maintenance dosage. A few seem slow to regain normal rhythm—for example, Cases 10 and 69 referred to in the earlier report—but these patients were normal when examined recently. The majority of these cases fall into Group III—patients aged over forty-five years. With increasing experience in the use of "thio" compounds in thyrotoxicosis, it is evident that the use of the smallest dose that will produce the desired result is the safest method of using this form of therapy. The common method of giving 0.2 gramme doses of thiouracil or methyl thiouracil every six to eight hours from the commencement of treatment is dangerous, as it does not give time for a building-up effect for the first week or ten days, and the lesser toxic effects are much more common with such dosage. If 0.1 gramme is given every eight hours for ten days and the dose is then increased to 0.2 gramme every eight hours until the basal metabolic rate falls to zero, very few reactions will be met with. Once this "adequate response" has been achieved, the dose must be

reduced to 0.1 gramme every eight hours for two to four weeks, and then in most cases 0.1 gramme every twelve hours will suffice for about four to six weeks. If the basal metabolic rate is held at zero or a minus figure in this

TABLE II.

Notes on Certain Cases in the Report of July 26, 1947.¹

Class.	Case Number.	Final Result.	Remarks.
I	77	Excellent.	Basal metabolic rate, 8/5/47, -8%. Pulse rate, 80 per minute. Appeared normal, 4/6/48.
II	13	Excellent.	This was a patient who had relapsed in February, 1947. On 10/5/47 the basal metabolic rate was -5%. On 21/5/48 it was +1%; the pulse rate was 76 per minute.
	21	Operation.	Requested operation May, 1948, because of persistent goitre. General condition was excellent.
	33	—	—
	44	Excellent.	Examined 15/6/48. Slight thyroid enlargement, otherwise normal.
	49	Operation.	Requested operation 29/9/47 for cosmetic reasons.
	50	Relapse, operation.	Relapsed April, 1948, and operated on August, 1948. Had a persistent goitre after twelve months' therapy.
	52	Operation.	Responded well. Basal metabolic rate on 28/5/47, -10%. Operation was advised as goitre persisted.
	53	Excellent.	Examined October, 1947, when thyroid had resolved completely.
	55	Operation.	Was very well until April, 1947, and had severe fright with hiccups. Thyroid enlarged after this, but basal metabolic rate -2%. Operation advised.
	61	Excellent.	Examined 5/3/48, pulse rate 84 per minute. Gland resolved, condition normal.
	70	Excellent.	Ceased treatment July, 1947. Examined 16/8/47, condition normal.
	74	Excellent.	Examined 16/8/48, condition normal.
III	76	Very good.	Examined 3/6/47, slight thyroid enlargement, otherwise normal.
	78	Relapse.	Relapsed 25/2/48. Basal metabolic rate +33%. Responded quickly and seemed normal July, 1948, but to continue maintenance.
	81	Operation.	Although basal metabolic rate was -8% in May, August and December, 1947, large thyroid persisted and operation advised 28/1/48.
	51	Operation.	Adenoma appeared as noted. Operation 7/7/48.
	83	Excellent.	Examined 21/10/47, heart regular, condition normal.
	62	Fair.	1/7/47 basal metabolic rate +1%. Thyrotoxicosis controlled and general condition good, but mentally unstable.
	65	Excellent.	Left eye slightly prominent, otherwise normal.
IV	73	Excellent.	In April, 1948, was normal and thyroid resolved.
	82	Excellent.	In October, 1947, was normal, and thyroid resolved.
	7	Operation.	Finally consented to operation, 10/12/47.
	56	Operation.	Total thyroidectomy, 21/5/1947.
	66	Operation.	Consented to operation, 3/8/48.
V	67	Operation.	Operated upon 27/5/47.
	71	Good.	29/5/47 basal metabolic rate -16%. Felt well.
	69	Excellent.	Was delusional June to August, 1947. In June, 1948, was well with regular pulse rate 72 per minute. Weight 172 pounds.
	75	Excellent.	Treatment completed 30/4/47. On 23/9/47 pulse regular, rate 72 per minute. Weight 187 pounds. Felt well and appeared normal.
	70	Excellent.	Treatment ceased August, 1947. Examined 5/7/48, weight 150 pounds. Felt well and appeared to be normal.

¹ All these patients have been checked within recent months, and those who were listed as continuing treatment have all now completed their treatment and final results can be given. In other cases additional information is available.

² These corrected results have been adjusted in the final figures now presented for the complete series.

time, then a maintenance dose of 0.05 gramme every twelve hours is carried on for a minimum period of four months. If there is much thyroid hyperplasia or if this develops during the first eight or twelve weeks of treat-

ment, it is necessary to commence giving *Thyroidum Siccum*, 0.5 grain, every twelve hours, or in a smaller dose if the basal metabolic rate has not fallen to zero. If a minus metabolic rate is maintained, the dose of *Thyroidum Siccum* may be increased even to one grain every eight hours until resolution of the hyperplastic gland occurs. In the last two years the tendency has been to commence giving thyroid extract at an earlier stage than was the case, and to carry it on for nine to twelve months with 0.05 gramme methyl thiouracil twice a day, before giving up hopes of reducing either exophthalmos or the hyper-trophic gland. In this connexion a paragraph from the article of July 26, 1947,² may be quoted:

... the control of thyroxin production is very finely balanced at the stage of "adequate response", and if treatment with "thio" compounds is stopped, then a recurrence of symptoms is apt to occur within a month or so. With a maintenance dosage sufficient to hold a zero metabolism for four months stability of a normal thyroxin production is obtained and the normal thyretrophic hormonal balance between pituitary and thyroid is also reestablished. It is in this stage that some additional thyroxin seems to be needed to establish this latter balance and so to overcome the thyroid hyperplasia and the exophthalmos which appear to be governed by the thyretrophic hormone. *Thyroidum Siccum* has been chosen as this is a standard British Pharmacopoeia preparation containing 0.5 milligramme of thyroxin in a half-grain tablet and is available in smaller dosages as well.

Experience has also confirmed the necessity for adjuvant therapy in the following forms: (i) sedation—fairly liberal to start with—to ease the nervous tension always present in these cases; (ii) liberal diet with some added mixed vitamin preparation of standard strength so as to make up for tissue wastage; (iii) iron therapy if there is any degree of anaemia with a haemoglobin value of 70% or less.

In order to minimize the risk of relapse or recurrence after long-term treatment of thyrotoxicosis with methyl thiouracil (or other "thio" preparation), it is most essential to have a long period of maintenance dosage; four months should be the minimum in cases in which an "adequate response" has been achieved within six to eight weeks, and six to eight months when the response has been slower. If *Thyroidum Siccum* has been used, then an additional two to four months' maintenance dosage is advisable.

Every patient should be informed that he has an 80% chance of cure without operation, provided he will cooperate in having regular tests of blood and metabolism carried out as necessary and by adhering strictly to instructions. He is also told that the average period of treatment is about nine months, but if he has a long history and a large thyroid it may take twelve months or more. As will be seen from the detailed records, few patients fail to carry out their part, and it is exceptional to have any one object on the score of time involved, as all are able to carry on with their usual duties and with increasing well-being and energy. Warning is also given that treatment must be stopped at once if they develop any fever, sore throat or rash other than a mild erythema, and they must report at once.

In the past year or so numerous reports as to basal metabolism are being received from country and suburban sources. Many of these are grossly incorrect, as can be observed from the clinical condition of the patient. Many patients with an anxiety neurosis are given high metabolic rates probably from over-breathing. Repeated examinations under strict basal conditions are advisable unless one has had considerable experience.

Propyl Thiouracil.

Propyl thiouracil is the compound mostly used in the United States of America, probably because Astwood in introducing it claimed that weight for weight it was some ten times more potent than other "thio" compounds and there was much less tendency to toxic reactions. It is clear from reports in current literature that these claims have not been substantiated altogether; in order to secure clinical effects there is an increasing tendency to "step up" the dosage so that the amount given now is three or

four times the dose originally employed, and with this increased dosage comes an increase in the reports of toxic manifestations. My own use of this compound in a series of fifteen cases showed that it was slower in action than methyl thiouracil, and the average time taken to secure an "adequate response" was some two to four weeks longer. However, it has been found valuable in a number of cases in which some toxic reaction had occurred with thiouracil or methyl thiouracil, to tide a patient over a period until he could go back to methyl thiouracil. Its preparation is much more difficult, and consequently its cost is higher than that of methyl thiouracil; but it should be kept in mind for the odd case in which it may be employed usefully. It is not without interest to note that an increasing number of clinics in the United States of America are now using methyl thiouracil.

Stanley and Astwood⁽²⁾ have studied the effects of "thio" compounds on the thyroid's uptake of radioactive iodine, and they find that methyl thiouracil is twice as effective (2x) as thiouracil, and propyl thiouracil is somewhat less effective (0.75x). Barfred⁽³⁾ has noted the relatively greater potency of methyl thiouracil as compared to propyl thiouracil, and in explanation quotes McGinty that "methyl thiouracil is not conjugated in human blood while the reverse is true of propyl thiouracil resulting in its partial inactivation"; this may explain the relatively higher activity and rapid action of methyl thiouracil. Barfred also makes the following statement:

Christensen has also shown that several of the thiouracil derivatives are bound to plasma proteins in blood. Thirty-five per cent. of methyl thiouracil can be recovered by ultrafiltration and only 5 per cent. of the propyl thiouracil can be so recovered. Practical proof of this is the fact that at present the small doses of propyl thiouracil proposed by Astwood, based on the marked goitrogenic effect, are being increased while the methyl thiouracil dosage is rapidly decreasing and is nevertheless causing a good antithyroid effect.

Substances with methyl or propyl groups are excreted mainly in the first twenty-four hours after ingestion, and about half the total quantity administered is secreted in the urine.

Thyreotoxicosis Complicating Pregnancy.

There is very little to be found in recent literature as to the incidence of thyreotoxicosis in pregnancy; but Whitelaw in an article published in November, 1947, quotes one record of 111 cases of this condition in 156,323 cases of pregnancy—an incidence of 0.071% only.

Considered from the point of view of pregnancy in thyreotoxicosis, my own experience over the last twenty-five years is that about one woman in 200 becomes pregnant during treatment for toxic goitre, or else this condition first manifests itself during pregnancy, generally about the third or fourth month. Under the latter conditions, patients are often referred for a decision whether pregnancy should be terminated and it seems that the prevailing opinion is in the affirmative.

Prior to 1943 when the "thio" compounds were introduced by Astwood, I seldom advised termination of the pregnancy, as with adequate preparation with iodine, sedation and general measures the patient could be brought through a subtotal thyroidectomy with safety as late as the sixth month, and not one has been known to have an abortion. After the sixth month medical treatment was advised, and this had to be continued after the child was born until such time as the patient could arrange for operation. The only exceptions to this course were few in number; they were usually women in the region of forty years with a first pregnancy, who were very toxæmic, or who were showing signs of cardiac breakdown, or who developed pronounced mental disorder, generally before mid-term.

With the advent of the "thio" compounds and our knowledge of their correct use, each patient examined with thyreotoxicosis in pregnancy has been carried through to a safe and uncomplicated delivery. Some diffidence has been expressed as to whether the "thio" compounds should be used in pregnancy because of a possible deleterious effect on the child; but experimental work

showed that rats treated with thiouracil during gestation gave birth to normal progeny, thus confirming Williams's contention that thiouracil does not pass through the placenta. It is worthy of note that in the fœtus colloid does not become evident in the thyroid gland until about the sixth month, so that thiouracil would be unlikely to affect the thyroid, and in any case it has little if any action on a normal gland.

Very few cases of thyreotoxicosis in pregnancy treated with "thio" compounds have been reported, and in a recent survey of the literature all that I can find are four by Astwood, three each by Palmer, Williams and Whitelaw, two by Easton and one by Vogt—a total of 16; to these can now be added eight cases from my own experience. Easton reports that one child had an enlarged thyroid, and in Whitelaw's cases one patient had an abortion at three months and in one case the child was an anencephalic monster. In the last-mentioned case the gland was normal in structure and in iodine content and was of average weight. It seems, therefore, that there is no valid reason why the "thio" compounds should not be used in the control of thyreotoxicosis during pregnancy.

Treatment should commence as early as possible; however, it should be borne in mind that there is likely to be some slight rise of the basal metabolic rate in a normal pregnancy. The usual precautions should be taken as to leucocyte counts every seven to ten days for the first six weeks of treatment and after that every three to four weeks. It should also be remembered that regular sedation plays a part, as does maintenance of a correct vitamin balance and general dietary.

During the last eight or ten weeks of pregnancy it is wise to give some iodine in small doses, such as Lugol's solution, three minims twice a day, and to carry this on during the period of lactation as a safeguard to the infant's thyroid, as "thio" compounds are excreted in the milk, and in newly born animals can produce some degree of myxœdema. "Thio" therapy should be discontinued or the dose reduced to 0.5 grammes twice daily during the last six to eight weeks of pregnancy.

With this form of treatment thyreotoxicosis as an indication for termination of pregnancy can be discarded in all but extreme cases, or possibly when the patient exhibits some sensitivity to "thio" compounds.

Misuse of "Thio" Drugs.

The ignorance of some medical men regarding the use of "thio" compounds in the treatment of toxic goitre is hard to credit, especially in view of the prominence given to this form of therapy over the last five years. In the first place, many prescribe it for the non-toxic forms of goitre and especially for the simple colloid goitre of adolescents, in which it is quite useless and may even do harm; if its administration is continued long enough and in sufficient dosage, hyperplasia of the thyroid is apt to occur and even some degree of hypothyroidism.

Every writer on the subject—and even trade literature—has stressed the possible dangers in using these drugs without proper controls, especially with regard to the leucocytes; yet patients are frequently given large doses for long periods with maybe an initial estimation of the basal metabolic rate, but seldom is a leucocyte count asked for under these conditions. A number of patients are now being seen who have large hyperplastic glands which have either developed during treatment or have enlarged appreciably. No heed has been given to the necessity for control with *Thyroideum Secum* in such cases, and in the majority of them all one can do is to recommend operation.

The necessity for adjuvant therapy is frequently ignored, and mistaken reliance is placed on the magical powers of thiouracil. Some men seem to have no knowledge of metric dosage, and I have seen many prescriptions written for doses of 2.0 grammes or 2.0 grains, 0.2 grain and so on. The ultra-cautious prescribe 0.05 grammes of thiouracil or methyl thiouracil once or twice a day for periods varying from three or four weeks to as many months, and then refer patients for operation as the "thio" therapy has failed. One of the most common mistakes, and one to which attention has been drawn time and time again, is the use of these compounds for patients with anxiety

TABLE III.

Case Number; Age (Years); Date Seen; Length of History.	Date.	Basal Metabolic Rate per Centum.	Weight. (Pounds.)	Pulse Rate per Minute.	Leuco- cytes per Cubic Milli- metre.	Percentage of Neutro- phile Cells.	Percentage of Eosino- phile Cells.	Result.	Remarks.
Class I. Under Twenty-five Years. Twenty-five Cases.									
86	3/6/48	+32	129	132	8000	64	4	Treatment continuing.	Parents estranged and many family troubles. Gland enlarged. Eyes staring; 6/8/48, very well, gland smaller. <i>Thyroidum Siccum</i> ½ grain twice a day, 1/7/48.
21 years	29/6/48	+12	125	96	7600	57	1		
20/5/48	23/7/48	-18	131	70	7600	55	1		
2 months									
Miss O.P.R.S.									
98	27/8/47	+29	95	156	9300	63		Good, but needs operation.	Acute thyrotoxicosis with large gland, exophthalmos <i>et cetera</i> . Slow response. Was given 0.3 grammes three times a day for four weeks in October, along with <i>Thyroidum Siccum</i> ½ grain twice a day. In July, 1948, weight 113 pounds, pulse rate 80 per minute, and well except for enlarged gland. Operation advised.
20 years	10/9/47	+31	103	84	11000	63			
20/8/47	8/10/47	+27	109	92	6100	40			
3 months	6/11/47	+18	116	80	9800	48			
Mrs. D.McN.	9/1/48	+7	113	76	—	—			
15/3/48	11/5/48	-2	109	80	—	—			
109	7/11/47	+20	150	134	4400	58	5	Operation.	A big girl of pituitary type. Leads a gay life and has asthma. Home life unsatisfactory. Large gland. Operation advised; undertaken 21/5/48.
22 years	18/11/47	+7	157	70	6000	44	2		
20/1/48	20/1/48	-7	166	76	3300	60	4		
6 months	3/2/48	+11	170	72	6000	44	1		
Miss P.B.									
113	22/3/48	—	105	146	—	—		Treatment continuing.	Relatively mild condition with obvious thyroid, tremor <i>et cetera</i> . Has done well.
24 years	12/4/48	+22	110	84	Reported	—			
21/3/48	3/5/48	-1	111	84	as	—			
6 months	24/5/48	-6	113	76	normal.	—			
Miss R.F.B.	15/6/48	-17	114	72	—	—			
115	11/3/47	+18	99	120	6000	71	2	Excellent.	Baby ten months and symptoms developed since. Has moderately severe condition. Macular rash developed in fifth week. Ceased treatment October, 1947; very well.
23 years	24/3/47	+23	103	76	8200	52	4		
8/3/47	5/4/47	-1	99	92	8500	48	5		
6 months	30/5/47	-4	104	86	10600	70			
Mrs. I.B.									
110	11/2/48	+30	120	100	—	—		Excellent.	Early mild thyrotoxicosis. Treated in country. Final result, normal in all respects.
24 years	10/3/48	+2	—	86	5900	52	9		
8/2/48	5/4/48	-16	—	—	—	—			
3 months	4/5/48	-16	—	68	6050	59	3		
Miss H.M.O.									
126	17/3/47	—	127	140	—	—		Excellent.	Typical acute Graves's disease. Treatment commenced one month before basal metabolic rate could be estimated. Completed treatment October, 1947, and appeared normal. Examined June, 1948, and is very well.
19 years	16/4/47	+1	135	92	20000	78	—		
17/3/47	30/4/47	-12	137	90	9800	56	—		
1 year	14/5/47	-8	137	84	11800	61	—		
Miss N.D.	28/5/47	-13	135	78	7800	58	—		
128	25/6/47	-12	135	80	8800	69	—		
22 years	25/7/47	+17	126	108	—	—		Excellent.	Treated for two months with sedation and rest. Very nervy. Stopped treatment early September, 1947, as was "depressed". Treatment ceased May, 1948. Quite normal.
11/8/47	12/9/47	+9	131	100	8000	72	6		
3 months	30/9/47	+5	—	—	7600	66	1		
Mrs. I.D.	16/10/47	-11	132	—	8000	77	1		
120	5/12/47	-20	135	—	—	—			
22 years	22/2/47	+39	141	130	8200	40	11	Excellent.	Typical acute Graves's disease with large gland <i>et cetera</i> . Given <i>Thyroidum Siccum</i> May, 1947, and continued for twelve months. Eyes returned to normal and gland barely palpable in May, 1948. Circumference of neck receded 5.5 centimetres.
31/3/47	12/5/47	-12	147	80	8000	44	13		
6 months	4/8/47	+1	157	—	7500	51	1		
Mrs. J.D.	29/8/47	-5	156	—	10000	54	—		
133	2/10/47	-6	157	90	8500	58	—		
22 years	14/11/47	+1	154	—	11000	61	—		
3/12/47	7/11/47	+29	120	120	6000	40	1	Excellent.	Came on after baby arrived. Treated by sedation and rest. Note rise in basal metabolic rate after giving <i>Thyroidum Siccum</i> . The enlarged gland then began to subside, and had cleared by May, 1948. Examined 22/7/48, quite normal.
4 months	5/12/47	-19	127	72	7400	58	5		
1 year	19/12/47	-1	127	72	8000	49	3		
Mrs. J.F.	14/1/48	+8	133	80	5600	52	2		
25/2/48	12/5/48	+15	131	80	5700	52	—		
148	10/2/48	+45	98	108	5100	66	—	Good, but continuing treatment.	Eyes "full" for two years. Thyroid swelling. Lives in country; treated under direction by local doctor. Leucocyte counts normal. July, 1948, better, but gland still large and will require operation.
23 years	9/3/48	-4	107	90	8000	61	—		
2 years	25/3/48	—	—	—	—	—			
Miss M.O.J.									
149	8/2/48	+25	93	100	5800	62	—	Good; continuing treatment.	Lost 28 pounds weight and gland enlarged. Lives in back country and could stay in town only two months. Treatment continued under local doctor, who wrote, 8/7/48, to say she is very well, weight 116 pounds.
15/3/48	6/4/48	+18	96	94	6700	67	—		
9/2/48		+8	100	80	6700	65	—		
6 months									
Miss S.F.K.									
151	-10/47	+23	99	126	4000	—	—	Excellent.	Acute Graves's disease with enlarged gland and prominent eyes. Responded well. Was subthyroid in February, but responded quickly to <i>Thyroidum Siccum</i> . May, 1948, was normal. Ceased treatment end July, 1948.
24 years	30/12/47	+9	106	88	5000	—	—		
3/12/47	10/2/48	-23	112	76	—	—	—		
4 months	26/2/48	±0	110	80	5000	—	—		
Miss O.K.	29/4/48	-5	—	60	—	—	—		
153	-9/47	+28	91	120	—	—	—	Excellent.	Very nervy and shaky for three months and gland enlarged. Treated by local doctor. Neutropenia responded to liver extract. Subthyroid in February, but recovered with <i>Thyroidum Siccum</i> . In June, 1948, very well.
23 years	-11/47	-7	94	72	—	—	—		
13/10/47	19/12/47	-14	90	72	5800	29	2		
3 months	16/1/48	+1	87	72	6800	20	1		
Mrs. R.L.	13/2/48	-16	86	72	6200	44	2		
161	26/9/47	—	93	180	—	—	—	Treatment continuing.	Acute Graves's disease came on after baby arrived a year earlier. Treatment started at once, as the patient is from the country and can attend only monthly. Is to carry on treatment with local doctor.
24 years	15/10/47	+62	105	128	5000	63	—		
29/10/47	29/10/47	+36	109	92	9400	55	—		
1 year	12/11/47	+8	113	72	5050	55	—		
Mrs. R.E.M.									
162	29/7/47	—	154	136	—	—	—	Excellent.	Had acute rheumatic fever 13 months earlier, and symptoms developed after this. Now typical acute Graves's disease. Treatment started 17 days before basal metabolic rate estimated. Given <i>Thyroidum Siccum</i> 26/9/47, and by 4/3/48 weight dropped to 147 pounds; circumference of neck from 30.5 to 35.5 centimetres, and eyes normal.
20 years	14/8/47	+9	163	88	8550	60	—		
29/7/47	28/8/47	+2	166	88	10000	48	—		
18 months	11/9/47	-9	168	88	9800	52	—		
Miss J.M.	25/9/47	-10	172	82	6700	56	—		

TABLE III.—Continued.

Case Number; Age (Years); Date Seen; Length of History.	Date.	Basal Metabolic Rate per Centum.	Weight. (Pounds.)	Pulse Rate per Minute.	Leuco- cytes per Cubic Milli- metre.	Percentage of Neutro- phils Cells.	Percentage of Eosino- phils Cells.	Result.	Remarks.
Class I.—Continued.									
166 20 years 12/2/47 3 months Miss Nel.McD.	12/2/47 3/3/47 8/4/47 21/4/47 5/5/47 5/8/47 9/9/47 31/10/47	— +4 -3 -9 -9 +3 +1 -9 +16	134 136 138 141 142 140 135 136 105	138 90 68 76 80 88 72 72 120	— 11800 10000 10450 — 11600 7300 5850 7000	— 72 90 76 — 78 73 39 49	— — — — — — — — 2	Excellent.	Acute onset and lost 16 pounds weight in six weeks. Treatment commenced three weeks prior to basal metabolic rate estimation. Ceased treatment 31/10/47. Examined 13/1/48, pulse rate 78 per minute, 137 pounds in weight. Thyroid and general condition normal.
167 15 years 1/10/47 3 months Miss Nor.McD.	17/10/47 9/6/47 22/5/47 30/4/47 18/6/47 12/9/47	+1 +11 +5 -16 -9	108 113 123 123 123	72 120 86 68 74	7150 7300 7200 5400 8400	42 74 62 58 72	10 1 6 2 3	Excellent.	Early acute thyreotoxicosis. Mother operated on for it eleven years earlier. Treatment carried on by local doctor. On 8/6/48 weight 117 pounds and apparently normal. Thyroid completely receded.
170 17 years 30/4/47 6 months Miss M.P.	9/6/47 22/5/47 30/4/47 18/6/47 12/9/47	+11 +5 -16 -9	113 123 123 123	120 86 68 74	7300 7200 5400 8400	74 62 58 72	1 6 2 3	Excellent.	Lost 15 pounds' weight, palpitation, nervy et cetera for six months, and gland has enlarged. Treatment started two weeks before basal metabolic rate estimated; 5/2/48, normal.
171 23 years 23/10/47 6 months Miss M.Pen.	3/11/47 3/12/47 14/1/48 5/3/48 14/4/48 7/2/48	+28 +21 +27 -5 -8 +79	72 74 74 75 78 76	126 84 86 84 68 140	8000 6800 6000 4000 7000 Reported normal.	73 64 58 57 71 —	3 2 2 1 1 —	Good, but continuing treatment.	Acute thyreotoxicosis with marked nervous instability. She did not take her treatment regularly at first, but did so in 1948 and improved rapidly.
179 20 years 1/8/48 3 months Miss J.R.	21/4/48 31/5/48	+11 +6	94 99	80 80	Reported normal.	— —	— —	Treatment continuing.	Early acute Graves's disease. Treated by doctor in country under direction. Relatively slow response, but prognosis good.
184 21 years 23/1/48 3 months Miss J.S.	14/1/48 10/2/48 28/2/48 15/3/48 1/5/48	+27 +22 +7 -3 -12	128 126 138 143 141	130 78 70 80 70	6200 5700 6100 6000 7000	63 45 70 64 —	1 6 2 1 —	Good, but continuing treatment.	Symptoms followed acute sinusitis in November, 1947. On 1/6/48 thyroid and eyes normal, pulse rate 70 per minute, weight 152 pounds and feels very well.
185 18 years 9/12/47 2 months Miss B.S.	9/12/47 30/12/47 14/1/48 20/1/48	+8 +7 -7 +6	101 112 126 124	156 104 82 88	8400 7000 7400 5800	69 67 59 69	— 3 1 —	Excellent.	Early acute Graves's disease, and lost 16 pounds' weight in four weeks. Gland enlarged rapidly and eyes very prominent. Commenced treatment at once. July, 1948, quite normal.
193 16 years 18/6/47 6 months Miss E.W.	14/12/46 18/6/47 8/7/47 31/7/47 21/8/47 18/9/47	+10 +7 +10 -3 -15 -9	122 136 134 136 141 139	106 90 108 72 70 72	— 6500 5700 5400 4500 6800	— 61 61 65 52 63	— 6 3 1 3 2	Excellent.	Loss of weight, enlarged thyroid and prominent eyes noticed in November, 1946. Was given potassium iodide for seven months and put on weight (14 pounds). Both eyes and gland grew worse. Started methyl thioracil 21/7/47. On 20/3/48, gland resolved, eyes normal, pulse rate 80 per minute, felt well.
199 24 years 17/10/46 2 months Mrs. H.W.	24/9/46 14/4/47	+36 -8	108 133	134 78	Reported normal.	— —	— —	Excellent.	Baby six months old. Has hypertension. Acute Graves's disease developed two months ago. Had to be treated by doctor in country under direction. Final result excellent.

Class II. Twenty-five to Forty-five Years. Fifty-two Cases.

87 40 years 31/8/47 3 years Mrs. P.M.P.	8/2/46 3/6/46 3/9/46 14/2/47 29/4/47 4/6/47 24/5/48 2/6/48 6/5/47 4/9/47 23/9/47 21/10/47 24/11/47 7/1/48 3/2/48 2/3/48 20/4/48 1/6/48	+66 +14 +34 ±0 -8 +1 +58 +36 +56 +11 +12 +21 +40 +24 +11 +7 -9 -17	86 86 — — 84 121 111 118 140 146 150 152 152 152 150 152 154 150	— — — — 84 80 90 120 120 84 82 84 82 70 74 78	5000 9800 7400 6800 — — — — 6800 8000 8000 4000 8400 5200 6200 7200 8200 8000	43 66 57 63 — — — — 56 73 69 57 70 61 60 64 74 —	14 4 9 — — — — — — — — — — — — — — —	Relapse. Continuing treatment.	Acute thyreotoxicosis developed after bad confinement three and a half years earlier, when she lost the baby. Was treated for two years with sedation and deep X rays, then 15 months with thioracil, and during this time the gland became very large (see special report in context).
90 43 years 20/8/47 6 months Mrs. E.My.	2/6/48 6/5/47 4/9/47 23/9/47 21/10/47 24/11/47 7/1/48 3/2/48 2/3/48 20/4/48 1/6/48	+56 +11 +12 +21 +40 +24 +11 +7 -9 -17	140 146 150 152 152 152 150 152 154 150	120 84 82 84 82 70 74 78	6800 8000 8000 4000 8400 5200 6200 7200 8200 8000	56 73 69 57 70 61 60 64 74 —	— — — — — — — — — —	Excellent.	Hypertensive. A "resistant" condition; patient treated in country under direction. Had a septic throat, end October, 1947. Treatment stopped for three weeks and basal metabolic rate rose. In January, 1948, was anemic, haemoglobin value 50%, given iron and liver extract. Thyroid enlarged and was given Thyroidium Secum ½ grain twice a day February, 1948, ½ grain April, 1948, one grain June, 1948, 3/8/48, "Has not felt so well for years."
92 27 years 8/3/47 1 year Mr. A.M.	27/3/47 10/4/47 24/4/47 16/7/47 1/8/47 27/8/47 29/9/47 4/6/48 5/6/48 28/8/46 12/9/46 30/9/46 10/10/46 8/11/46 27/3/47 7/7/47 10/3/48	+31 +15 +18 +6 +3 -3 -18 +24 +9 +29 +11 -15 -16 -8 +12 -13 +12 -15	143 144 143 146 146 146 142 134 136 184 192 197 200 201 198 211 208 68	140 80 72 72 72 64 60 84 72 120 76 60 64 72 72 72 80 68	— 10800 8900 12800 8300 11600 7050 4700 3450 5500 7400 7700 6300 6350 6700 6800 5800 —	— 57 56 50 57 48 46 26 54 38 37 48 48 77 47 46 50 —	— — — — — 3 1 — 4 6 3 4 1 — — — —	Relapse and operation.	Was treated eight years previously for 18 months. Always very nervy, but much worse in last year. Enlarged thyroid three years. Given Thyroidium Secum June, 1947, until February, 1948, but the gland was still very large. Relapsed in May, 1948. In view of the neutropenia, June, 1948, was given iodine preparatory to operation.
93 32 years 27/8/46 3 months Mr. S.N.	28/8/46 30/9/46 10/10/46 8/11/46 27/3/47 7/7/47 10/3/48	+29 +11 -15 -8 +12 -13 +12 -15	184 192 197 200 201 198 211 208 68	120 76 60 64 72 72 72 80 68	5500 7400 7700 6300 6350 6700 6800 5800 —	38 37 48 48 77 47 46 50 —	6 3 4 1 1 — — — —	Operation.	Lost 42 pounds in weight in three months and developed large gland. Was given Thyroidium Secum from 18/10/46 to 19/12/47, but although exophthalmos cleared, the gland increased. He felt well and carried out full duty with Police Force. Operation was advised in October, 1947, but at his wish was deferred to July, 1948.

TABLE III.—Continued.

Case Number; Age (Years); Date Seen; Length of History.	Date.	Basal Metabolic Rate per Centum.	Weight. (Pounds.)	Pulse Rate per Minute.	Leuco- cytes per Cubic (Milli- metre.)	Percentage of Neutro- phils Cells.	Percentage of Lympho- cytes Cells.	Result.	Remarks.
Class II.—Continued.									
94	13/11/47	+33	108	126	7750	33	3	Febrile reaction. Operation.	Symptoms developed during first pregnancy, and much worse after second pregnancy two years ago. Had fever reaction 30/11/47; settled in five days and was given 0.06 gramme 12-hourly for three doses; recur- rence of fever reaction, so was given propyl thiouracil, and in February, 1948, methyl thiouracil. Operation advised.
26 years	5/12/47	+18	101	92	5100	58	6		
9/10/47	22/12/47	-15	101	112	4200	70	2		
3 years	16/1/48	+7	102	120	8550	77	—		
Mrs. M.O.	30/1/48	+9	104	132	5700	72	—		
	27/4/48	+13	109	124	4550	54	2		
97	10/6/48	+17	95	94	9450	63	—	Continuing treatment.	Three years ago "nervous breakdown" and was in mental hospital for six months. Several severe illnesses in last two years. Obvious acute thyrotoxicosis and was placed on usual treatment at once, although basal metabolic rate could not be estimated for four weeks. Given <i>Thyroidum Siccum</i> , 25/6/48. Examined August, 1948: greatly improved.
26 years	9/7/48	+10	104	94	—	—	—		
14/5/48	23/7/48	-7	109	90	13150	74	—		
3 years	13/8/48	-8	108	—	—	—	—		
Mrs. A.McC.									
99	29/9/45	+42	98	130	7200	46	—	Good, but relapsed.	Thyrotoxicosis followed birth of stillborn child, November, 1945; treated with sedatives. Ceased treatment March, 1946. Relapse November, 1946. Carried on treatment to January, 1948. Examined July, 1948: very well.
32 years	26/10/45	-6	104	84	7500	40	—		
20/9/45	28/11/45	-10	107	90	6250	56	—		
20 months	21/1/46	-15	113	80	6100	63	—		
Mrs. H.McL.									
101	16/3/48	+56	115	120	8600	76	—	Continuing treatment.	Her fourth child, now aged two years, is a Mongol and she has worried greatly over this. Gland enlarged May, 1947. Had severe influenza July, 1948, and stopped treatment for two weeks.
37 years	27/4/48	+18	47	86	8000	64	—		
2/4/48	21/6/48	+4	122	80	6000	73	—		
1 year	3/8/48	+11	117	80	6000	66	—		
Mrs. E.B.C.									
102	27/9/47	+22	129	90	5500	38	4	Excellent.	Patient treated by her local doctor. Despite neutropenia, further check on leucocytes was not made, as she was so well, except in December, 1947, when she was hypo- thyroid, but recovered well with <i>Thyroidum Siccum</i> .
26 years	5/11/47	-9	137	72	—	—	—		
37/9/47	4/12/47	-30	139	64	—	—	—		
3 months	25/2/48	+9	131	86	—	—	—		
Mrs. P.M.C.	14/7/48	-1	139	82	8200	43	2		
103	17/3/47	+40	132	156	3600	59	—	Excellent.	Typical acute thyrotoxicosis with very large thyroid and exophthalmos. <i>Thyroidum</i> <i>Siccum</i> commenced 16/4/47 and continued to April, 1948. In July, 1948, eyes, gland and condition normal.
42 years	2/4/47	+15	—	100	4600	72	—		
10/5/47	15/4/47	+9	—	82	5200	73	—		
1 year	29/4/47	-2	140	80	5800	57	—		
Mrs. F.L.C.	8/7/47	+6	138	82	6200	56	—		
104	6/9/47	+22	127	90	—	—	—	Continuing treatment.	Moderate degree of thyrotoxicosis. Lives in country and does heavy farm work. Refuses to consider operation, as she feels so well.
45 years	10/1/48	+11	126	120	5200	65	9		
27/9/47	4/3/48	-9	126	102	5000	66	—		
6 months	9/4/48	+4	129	90	—	—	—		
Mrs. A.B.									
106	30/12/47	+43	112	120	—	—	—	Continuing treatment.	Moderately enlarged thyroid. Started <i>Thyroidum Siccum</i> in June.
39 years	24/2/48	+10	110	—	6400	64	—		
22/1/48	1/4/48	-8	109	92	5500	67	—		
6 months	5/5/48	+2	111	92	6900	72	—		
Mrs. A.A.	22/6/48	-1	108	100	11400	77	—		
107	14/4/47	+29	102	132	6300	63	—	Continuing treatment.	Has had much worry in home, and drinks heavily. Examined 3/4/48, thyrotoxicosis controlled, but still much worry, and drinks to excess.
41 years	24/6/47	+1	101	82	7200	77	—		
3/4/47	6/8/47	+6	103	84	8600	59	—		
3 years									
Mrs. E.J.B.									
108	1/8/47	+15	127	96	—	—	—	Excellent.	Mild thyrotoxicosis. Ceased treatment April, 1948, and has been restored to normal.
31 years	5/11/47	+12	130	84	—	—	—		
17/9/47	28/11/47	-18	133	72	6600	62	—		
1 year	19/12/47	-15	131	72	6200	54	—		
Miss M.B.									
111	15/3/47	+24	135	94	8400	48	5	Good.	Symptoms developed after birth of child 16 months ago. Thyroid enlarged with treatment. March, 1948, pulse rate 80 per minute, weight 151 pounds; feels very well. Thyroid obvious.
29 years	11/4/47	+13	144	90	4900	53	3		
7/3/47	9/5/47	+7	—	—	—	—	—		
1 year									
Mrs. E.M.B.									
114	3/3/47	+35	135	132	5200	60	2	Excellent.	Acute condition with large thyroid and prominent eyes. Deserted by husband in May, 1947. Given <i>Thyroidum Siccum</i> in May. Ceased treatment February, 1948, as she appeared quite normal; 29/7/48, condition normal.
42 years	11/4/47	+12	138	76	3800	48	1		
24/3/47	5/6/47	+8	140	72	3600	57	2		
6 months	26/5/47	-16	142	72	6400	51	20		
Mrs. M.B.	2/7/47	+10	140	78	5000	63	9		
28/7/47	—	-16	144	76	5400	58	6		
29/9/47	—	+1	138	—	7600	70	8		
27/1/48	—	-12	142	68	5000	63	1		
—	—	+10	—	120	—	—	—		
117	—	+15	—	120	—	—	—	Excellent.	Typical mild thyrotoxicosis. Was given iodine for four months, but lost more weight and became very tremulous. Responded well. Examined 22/3/48, very well.
43 years	—	+16	108	96	6800	64	—		
28/1/47	8/2/47	-8	—	—	6000	50	—		
6 months	28/2/47	-8	—	—	8000	56	—		
Mrs. D.M.C.	10/3/47	+1	110	76	—	—	—		
24/4/47	—	-10	120	72	6000	51	—		
24/9/47	—	-5	128	68	7000	54	—		
—	—	+16	—	—	—	—	—		
120	—	+33	102	84	6000	69	—	Good.	In May, 1946, treated in hospital for goitre. Had large doses of iodine and later thio- uracil. Has had a lot of pelvic trouble and is neurasthenic. Did well on correct dosage, continued to November, 1947; 21/7/48, condition satisfactory.
37 years	22/2/47	+29	103	88	7000	71	—		
4/2/47	8/3/47	—	—	—	—	—	—		
1 year									
Mrs. D.C.	Refused further tests.								
121	27/11/46	+19	128	110	7000	57	—	Excellent.	Mild thyrotoxicosis. Treated by her own doctor in country. Final result excellent.
42 years	8/4/47	—	147	72	—	—	—		
26/11/46									
1 year									
Miss V.C.									
122	26/6/46	+30	129	152	—	—	—	Excellent.	Treated under direction by her own doctor.
44 years	24/7/46	+16	130	100	—	—	—		
26/6/46	6/8/46	-8	145	76	—	—	—		
6 months	14/11/46	-13	146	78	—	—	—		
Mrs. A.M.C.	22/1/47	-17	144	72	—	—	—		
20/3/47	—	-11	144	80	—	—	—		
2/6/48	—	+7	142	80	—	—	—		

TABLE III.—Continued.

Case Number: Age (Years): Date Seen: Length of History.	Date.	Basal Metabolic Rate per Centum.	Weight. (Pounds.)	Pulse Rate per Minute.	Leuco- cytes per Cubic Milli- metre.	Percentage of Neutro- phils Cells.	Percentage of Eosino- phils Cells.	Result.	Remarks
Class II.—Continued.									
124	27/9/47	+41	126	120 ?	6500	48	—	Excellent.	Had auricular fibrillation and sent to hospital, when thyrotoxicosis was diagnosed. Final result most satisfactory.
37 years	7/10/47	+10	—	90	7550	48	—		
26/9/47	27/10/47	+4	—	—	8000	40	—		
6 months	17/11/47	-17	135	60	8850	53	—		
Mrs. G.C.	8/1/48	-12	—	—	9000	58	—		
	23/1/48	+2	138	—	8850	51	—		
127	15/3/48	+2	139	72	9450	53	—		Relapsed. Baby 14 months ago and symptoms came after that. Now typical acute Graves's disease with large gland. Relapsed May, 1948, when on maintenance dose, and gland enlarged. Operation advised when settled.
28 years	15/1/48	+4	115	74	4700	54	8	Unsatis- factory.	
23/12/47	23/1/48	-9	124	68	4600	47	8		
1 year	23/2/48	-16	123	80	4400	52	4		
	15/3/48	-4	122	86	4100	56	0		
Mrs. V.M.D.	17/5/48	+20	120	100	4400	50	—		
134	1/6/48	+9	122	90	4600	60	1	Good.	Obvious acute thyrotoxicosis. Was given very small doses of thioracil and iodine for some six weeks. Commenced correct therapy 11/3/47, and it was three weeks before basal metabolic rate could be estimated. She stopped treatment July, 1947, as she was so well. Examined 5/12/47: very well, except slight enlargement of gland.
39 years	11/3/47	+5	120	88	7500	67	6		
11/3/47	14/4/47	-4	120	80	5650	56	4		
6 months	26/4/47	-14	120	80	5200	55	5		
Mrs. V.F.	12/5/47	+2	121	76	6300	61	2		
135	18/8/47	+16	99	96	—	—	—	Good.	Baby six months ago and symptoms came after this. Has had domestic troubles, which grew worse early in 1948. Examined June, 1948: thyroid just-visible. Generally well, except for her worries. Became nervy and lost weight, then noticed right eye enlarging. Being treated by local doctor under direction. Improving rapidly.
29 years	24/10/47	+3	101	78	9400	63	—		
19/9/47	11/12/47	+11	99	80	6500	—	—		
6 months	13/1/48	-17	96	80	6300	—	—		
Mrs. J.A.F.	12/3/48	+5	93	—	8400	68	—		
136	8/5/48	+40	—	136	White cells reported as normal.	—	—	Continuing treatment.	
44 years	18/6/48	+24	—	120	—	—	—		Lost 35 pounds in weight in one year; nervy. Gland enlarged and eyes prominent only last three months. Started treatment at once, two weeks before basal metabolic rate was estimated. Ceased treatment April, 1948. Returned to New Guinea, and 17/6/48 was well and weight 157 pounds.
6/5/48	21/7/48	+1	—	—	—	—	—		
Mrs. L.G.									
140	25/7/47	+9	134	120	8800	69	1	Excellent.	
44 years	6/8/47	-12	144	72	6000	57	4		
14/7/47	29/8/47	-20	146	66	6000	58	1		
1 year	1/10/47	-13	149	72	8600	71	1		Symptoms two years. Has been on iodine and sedation 15 months despite rising basal metabolic rate. Extreme nervous manifestations. Gdema of legs recently. Thyroid moderately enlarged. Amenorrhoea four months. Ceased treatment November, 1946. Menses normal and feels well. Examined 21/7/47: very well, 155 pounds.
Mrs. C.M.H.									
141	-2/45	+26	—	—	—	—	—	Excellent.	
45 years	-12/45	+34	—	—	—	—	—		
1/2/46	26/2/46	+37	132	160	9500	62	—		
2 years	12/3/46	+27	135	120	11100	56	—		
Mrs. E.H.	26/3/46	-10	133	80	9100	63	—		Marked nervous instability. Has had much family worry. Completed treatment May, 1947, and was very well. Pulse rate 84 per minute and weight 144 pounds. Can now cope with her worries.
	2/5/46	+3	138	80	8100	56	—		
	25/6/46	+0	139	84	—	—	—		
	9/8/48	-18	—	—	8000	66	—		
142	2/8/46	+45	129	132	Reported as normal.	—	—	Excellent	
45 years	8/10/46	-20	139	84	—	—	—		
30/8/46	11/11/46	-29	134	84	—	—	—		Typical acute Graves's disease with large gland and prominent eyes. Treated by local doctor under direction. Subthyroid May, 1948. July, 1948, gland normal and feels well.
1 year	17/2/48	-4	139	100	—	—	—		
Mrs. I.F.H.	29/12/47	+23	109	120	8000	60	6	Excellent.	
27 years	1/4/48	-12	115	84	5600	58	2		
13/12/47									
3 months									
Mrs. J.R.J.	27/10/47	+16	115	108	9000	60	—	Excellent.	Became nervy and noticed swelling of thyroid three months. Was subthyroid in January, but responded quickly to Thyroideum Siccum. May, 1948, apparently normal.
41 years	25/11/47	+2	112	90	8600	54	—		
27/10/47	6/1/48	-21	120	62	10600	65	—		
3 months	1/3/48	+5	110	76	7000	76	—		
Mrs. M.R.E.J.									
150	9/5/47	+21	—	120	—	—	—	Good, but continuing treatment.	
35 years	11/3/48	+9	132	102	9850	68	—		Definite thyrotoxicosis. Was given thioracil for some three months after basal metabolic rate estimated on 9/5/47, but discontinued, and symptoms have recurred. On 25/6/48 was well.
2/3/48	25/3/48	-4	135	72	7200	55	—		
1 year	8/4/48	-2	135	90	5900	62	—		
Mrs. D.M.K.	22/4/48	-1	139	86	11600	60	—		
156	15/12/47	+25	116	140	4650	32	1	Good, but continuing treatment.	
39 years	29/12/47	+16	121	90	4400	50	10		
13/12/47	12/1/48	-3	125	80	4200	50	2		Acute thyrotoxicosis with large, even gland. Treatment continued in country, as she could stay in town only for a month.
Mrs. A.D.L.	24/6/47	+31	135	120	10900	58	—	Excellent.	
38 years	10/7/47	-14	137	72	9700	65	—		
23/6/47	24/7/47	-11	136	84	12000	71	—		
1 year	3/9/47	-11	141	72	8800	70	—		
Mrs. F.L.M.									
160	16/4/48	—	124	140	—	—	—	Continuing treatment.	Acute thyrotoxicosis, so treatment was started at once, as patient can come from country only monthly. Has responded very well; local doctor supervising.
33 years	19/5/48	+9	126	86	7400	73	—		
16/4/48	17/6/48	-4	132	72	4850	58	—		
4 months									
Mrs. M.O.M.									
163	-9/47	+57	103	132	—	—	—	Excellent.	
27 years	10/10/47	+30	105	104	4350	43	—		Symptoms two years, but lost 15 pounds in weight in last six months. Two sisters, mother, aunt and grandmother had toxic goitre. In October her doctor failed to carry out advice about giving liver extract and Thyroideum Siccum. These given 25/11/47. Although low basal metabolic rate, no myxodema. Treatment ceased May, 1948, and on 29/7/48 was normal.
8/10/47	24/10/47	+17	108	88	5200	67	—		
2 years	7/11/47	-10	112	80	3300	51	—		
Miss P.M.	21/11/47	-41	115	72	4200	49	—		
	19/12/47	-27	112	80	—	—	—		
	21/1/48	-14	111	80	3950	58	—		

TABLE III.—Continued.

Case Number; Age (Years); Date Seen; Length of History.	Date.	Basal Metabolic Rate per Centum.	Weight. (Pounds.)	Pulse Rate per Minute.	Leuco- cytes per Cubic Milli- metre.	Percentage of Neutro- phile Cells.	Percentage of Eosino- phile Cells.	Result.	Remarks.
Class II.—Continued.									
172 25 years 4/11/47 8 months Mrs. M.J.P.	6/11/47 11/12/47 10/2/48 21/4/48 4/5/48	+22 — — — -2	149 — — 144 —	140 80 80 160 96	6200 3800 4200 7300 7350	67 — — 70 65	— — — — —	Operation. (Hemi- thyroid- ectomy only, as difficult.)	Very acute Graves's disease with large gland. Had to return to country under care of local doctor, who stopped treatment when leucocytes fell to 4200 per cubic millimetre. When examined, 21/4/48, had relapsed; gland very large. Sent to hospital for operation; performed 18/5/48, and followed by deep X-ray therapy.
173 28 years 16/7/47 9 months Mrs. Y.P.	24/2/48 9/3/48 28/3/48 6/4/48 4/5/48 18/5/48 11/6/48 24/6/48 22/7/48 3/2/48 13/1/48 4 months Mrs. J.P.	+28 +40 -40 -32 +25 +25 +25 +24 -15 -12 +36 +17 -5	154 154 155 167 159 164 165 167 166 170 101 108 107 108	88 110 96 114 100 96 102 98 120 120 108 80 80	7400 3800 3900 5300 5000 6100 5000 3600 3600 — — — 7600	57 39 31 65 62 49 59 43 52 — — — 57	— 7 2 3 — — 2 2 — — — — —	Resistant, but con- tinuing treatment.	Acute thyrotoxicosis of pituitary type. Was given iodine and sent to hospital for operation, but basal metabolic rate on 9/3/48 was +40%. Had also been given thiouracil, but had joint pains, and leucopenia developed. Methyl thiouracil given, 23/3/48, 0.2 gramme, three times a day, until 4/5/48, then iodine for four weeks; but basal metabolic rate went up. Referred to me 16/7/48. Will need operation.
174 35 years 13/1/48 4 months Mrs. J.P.	2/2/48 3/2/48 5/3/48 28/4/48	+34 +36 +17 -5	101 108 107 108	108 80 80	— — — 7600	— — — 57	— — — —	Reaction. Continuing treatment.	In December, 1947, was given methyl thiouracil, 0.2 gramme, three times a day; febrile reaction after one week and recurred later. In January, 1948, given propyl thiouracil; again febrile reaction, which recurred also. On 5/2/48 given methyl thiouracil, 0.1 gramme, three times a day, with usual adjustment therapy, and has proceeded without trouble. In May, 1948, was subthyroid.
175 31 years 24/9/47 8 years Mr. A.W.P.	10/9/47 10/10/47 24/10/47 25/11/47	+44 +14 -22 -13	142 146 157 155	120 72 60 72	— — 9100 —	— — 53 —	— — — —	Operation.	A long history of thyrotoxicosis of varying degrees. In early, 1947, lost 30 pounds in weight in two months. In view of history and large gland operation advised and carried out, 4/2/48.
176 27 years 17/3/47 2 years Mrs. P.R.P.	20/3/47 10/4/47 20/5/47 23/7/47 21/8/47	+19 -3 +6 +1 -16	135 135 131 133 136	106 64 68 72 72	9200 11100 5900 7300 8800	52 56 58 58 49	4 2 2 2 5	Fair.	Two years ago had a nervous breakdown, subsequently had shock therapy. After this was given thiouracil for a time. Has had much pelvic trouble. In January, 1948, improved generally, but seems mentally unstable.
177 28 years 7/2/47 6 months Mrs. P.R.	20/2/47 6/3/47 20/3/47	+39 +5 +5	90 94 95	120 80 76	7100 7200 5400	52 63 54	2 — —	Continuing treatment.	Lost 32 pounds in weight in six months. Gland enlarged and eyes full. Had to return to country. Local doctor reported steady progress up to June, 1948.
181 40 years 20/6/46 1 year Mrs. M.R.	20/6/46 13/11/46 29/4/47	+17 -12 -14	102 112 116	120 90 80	7200 7600	65 63	— — —	Excellent.	Mild but typical thyrotoxicosis. Treated by local doctor under direction; 5/5/47, normal.
182 25 years 27/11/47 12 months Mrs. S.S.	6/11/47 24/12/47 29/1/48 1/3/48 12/4/48 18/5/48 31/5/48 1/7/48 1/11/47 15/12/47 22/11/47 8 months Mrs. W.Ta.	+38 +31 +20 +14 +2 -15 — -14 +45 +20 +0 +9	116 114 112 114 114 114 106 106 113 115 120 137	150 100 94 80 74 — 120 100 132 100 76 74	— 8000 6000 8400 6200 9600 6800 9000 8000 6600 — — —	— 75 65 62 67 43 33 49 — — — —	— — 1 4 1 — — 1 — — — — —	Continuing treatment.	Baby 2½ years and has been nervy since. Tremor, palpitation and enlarged thyroid in past year. Has had many home worries. Was given liver substance May, 1948, for neutropenia. Ceased all treatment 5/6/48. Had severe influenza at end of June.
186 35 years 22/11/47 8 months Mrs. W.Th.	1/11/47 15/12/47 10/1/48 3/7/48	+45 +20 +0 +9	113 115 120 137	132 100 76 74	9000 6600 — —	— — — —	— — — —	Good, but operation required.	Thyrotoxicosis developed after childbirth eight months ago. Had enlarged thyroid after baby eight years ago and again seven years ago. Large fixed gland. Operation advised, and to be done.
187 27 years 24/7/47 18 months Mrs. W.Th.	5/8/47 26/8/47 2/10/47 3/11/47 23/12/47 19/2/48	+18 +3 +11 +9 +0 -8	115 114 111 110 118 111	96 70 68 78 72	8500 8000 9200 7000 7000	64 43 63 48 63	3 3 2 3 1	Excellent.	Symptoms over 18 months suggested anxiety neurosis, except for enlarging thyroid and fine tremor. Treatment commenced 12 days prior to basal metabolic rate estimation. Had an attack of gastro-enteritis at end of August and stopped treatment two weeks. Examined 9/6/48: In first class condition.
188 34 years 10/2/47 2 years Mrs. S.T.	25/3/47 16/5/47 17/7/47 1/10/47 4/11/47	+12 -5 +22 +7 +3	158 157 160 163 163	102 88 90 110 84	8000 6100 9100 5500 6300	63 62 63 64 68	1 4 1 1 —	Good.	Two years ago was thought to be subthyroid and was given <i>Thyroidum Siccum</i> for a time, but grew much worse. Had three weeks in hospital recently, on iodine, and was better. Although basal metabolic rate estimation was asked for 10/2/47, it was not made until 25/3/47. A difficult patient to manage; large neuroathenic element. Raised basal metabolic rate July, 1947, was just after severe influenza; treatment stopped. Examined 8/4/48; relatively normal.
189 25 years 21/7/47 2 years Miss S.J.T.	6/5/47 7/10/47 2/2/48 16/2/48 1/3/48 15/3/48	+27 +38 +29 +31 +12 +13	102 101 99 99 102 104	150 130 128 106 80 120	— 12500 9800 9100 8750	— 87 75 68 80	— — — — — —	Poor, but continuing treatment.	Treated for two years as hypertensive. Has definite anxiety neurosis, and a difficult patient. Lives in country and treatment was refused unless she came to town for three months. She did this 2/2/48. It is doubtful whether she carried out instructions. Returned home 20/3/48. Letter from doctor, 23/6/48, says she is much better and carrying on treatment. Operation refused.
192 40 years 28/10/47 6 months Mrs. Y.W.	27/10/47 14/11/47 12/1/48 26/2/48	+21 -10 -13 -15	121 126 135 138	120 70 — —	— 8400 7800 6100	— — 49 56	— — — —	Excellent.	Had a heavy fall six months ago, and since then has developed usual acute thyrotoxicosis. Gland moderately enlarged. Responded well and 6/7/48, pulse rate 76 per minute; thyroid normal and felt very well.

TABLE III.—Continued.

Case Number: Age (Years): Date Seen: Length of History.	Date.	Basal Metabolic Rate per Centum.	Weight. (Pounds.)	Pulse Rate per Minute.	Leuco- cytes per Cubic Milli- metre.	Percentage of Neutro- phils Cells.	Percentage of Eosino- phils Cells.	Result.	Remarks.
Class II.—Continued.									
194 26 years 10/11/46 4 months Mrs. M.W.	10/11/46 3/4/47 2/5/47 3/7/47	— — — +7	139 172 172 181	110 84 76 80	Reported as normal. 9800	— — — —	— — — —	Excellent.	Acute Graves' disease. Lost 35 pounds in three months. Could not come for basal metabolic rate estimations, but local doctor checked leucocytes. On 3/7/47 appeared normal in all respects.
195 29 years 12/3/46 2 years Mrs. J.S.W.	28/1/48 3/5/48 30/8/48 2/5/48 10/5/48 30/6/48	+30 +22 +8 +8 +4 +10	108 115 115 130 128 130	130 130 — — 90 90		Reported as normal.	— — — — — —	— — — — — —	Excellent
196 35 years 1/2/47 2 years Mrs. H.Wt.	-11/46 11/2/47 25/2/47 10/3/47	+38 +34 +30 +25	140 149 — —	160 140 120 130	5400 3500 7400 5700		— — 50 39	— — 6 —	Nil. Operation.
200 23 years 24/3/47 3 years Miss E.W.G.	27/3/47 12/4/47 5/5/47 26/5/47 11/7/47	+11 — — -15 -15	99 — — 102 103	96 — — 70 76	8000 9200 7600 6200 7000	53 68 72 58 69	4 2 2 2 1	Good, but continuing treatment.	Developed thyrotoxicosis in Internment camp, Singapore. Has had iodine for two years. Left eye more obvious than right. Hard, enlarged thyroid. Acute tonsillitis, 9/4/47; no neutropenia. Tonsillectomy 24/4/47. Treatment resumed 4/5/47. Returned to Singapore 22/7/47; was then well.
Class III. Over Forty-five Years. Twenty-four Cases.									
88 40 years 12/4/48 3 years Mrs. K.D.	10/4/48 13/5/48 24/6/48	+21 -13 -13	107 112 116	120? 72 72	— 8400 8800	— 56 58	— 3 —	Continuing treatment.	Has had a hard and worrying life in New Guinea. Heart trouble developed after pleurisy in September, 1946. Fibrillation. Small firm thyroid. Was well 4/8/48 and heart regular. Pulse rate 64 per minute, weight 123 pounds.
89 45 years 4/5/47 6 months Mrs. E.E.S.	21/12/46 17/3/47 31/3/47 22/4/47 23/5/47 23/7/47 30/10/47	+65 +25 +13 +5 -11 -6 -7	115 122 125 127 131 133 123	123 102 84 76 76 80 82	— 7100 — 6700 7400 5900 6900 3900	— 35 — 25 51 46 46 48	— 1 — 5 2 2 2	Relapse. Continuing treatment.	Neutropenia developed April, 1947. Was given liver extract. Thyroid enlarged and <i>Thyroideum Siccum</i> given May, 1947. Went to country, September, 1947, and stopped treatment. Obvious relapse on 4/8/48, after heavy work, worry and sick child.
91 62 years 7/11/47 18 months Mrs. C.G.	10/10/47 25/11/47 16/12/47 6/1/48 16/2/48	+39 +46 -3 -6 -17	106 101 103 105 109	123 120 68 84 90	— 3850 3950 3700 3850	— 51 61 69 55	— — — — —	Excellent.	Loss of 21 pounds in weight in a few months was first sign. Slight exophthalmos, much more obvious in left eye. Moderately enlarged gland, which receded after <i>Thyroideum Siccum</i> , 25/5/48. On 5/8/48 seemed stabilised.
100 52 years 17/5/48 1 year Mrs. A.M.McC.	31/5/48 22/6/48 13/7/48	+48 +37 -5	110 106 109	136? 98 88	8800 8100 6000	68 62 72	— — —	Continuing treatment.	Illness followed worry and a sudden death in family. Was given iodine for five weeks. Had fibrillation, which cleared at the end of June.
110 48 years 15/10/47 9 months Mrs. M.M.B.	3/11/47 17/11/47 1/12/47 15/12/47 25/2/48 11/2	+41 +8 +0 -13 -13 +38	107 106 108 110 104 157	132 72 98 80 84 180	9100 7200 8000 6100 6250 6800	47 61 51 69 69 69	1 10 2 1 1	Excellent.	Treated for four months for heart disease. Developed macular rash in fourth week; cleared in two days. Ceased treatment May, 1948.
112 55 years 24/7/47 4 years Mrs. E.B.	2/9/47 16/9/47 30/9/47 25/10/47 20/1/48 24/3/47 16/4/47 27/5/47 24/6/47 17/7/47 15/8/47 1/10/47 15/8/47 25/9/47 25/8/48	+8 -9 +1 +9 +1 +7 +16 +12 -5 +4 -3 +9 +10 -13	155 159 161 164 165 128 129 129 133 135 134 136 119 117 124	72 72 60 72 40 130 120 120 90 78 76 82 84 60	4750 9400 6100 4950 4000 8500 5600 4000 7000 6600 7000 6600 8000	61 63 48 — 59 64 62 68 68 68 68 68	3 4 6 — — — — — — — — — — —	Excellent.	Symptoms developed after son drowned four years ago. Is hypertensive. No obvious thyroid. Ceased treatment February, 1948. Examined July, 1948; pulse rate 72 per minute, feels well.
116 46 years 15/5/47 4 months Mrs. K.C.	24/3/47 16/4/47 27/5/47 24/6/47 17/7/47 15/8/47 1/10/47 15/8/47 25/9/47 25/8/48	+8 +16 +16 +12 -5 +4 -3 +9 +10 -13	128 120 120 133 135 134 136 119 117 124	132 130 120 120 78 76 82 84 60	9100 7200 8000 6100 6250 6800 7000 6600 7000 6600 7000 6600 8000				

Case Number; (Years) Date Seen; Length of History.	Date.	Basal Metabolic Rate per Centum.	Weight. (Pounds.)	Pulse Rate per Minute.	Leuco- cytes per Cubic Milli- metre.	Percentage of Neutro- phils Cells.	Percentage of Eosino- phils Cells.	Result.	Remarks.
Class III.—Continued.									
130 52 years 15/3/47 2 years	4/3/48 9/4/48 23/4/48 22/7/48	+23 +9 -1 +7	137 143 144 150	100 80 80 —	8600 6900 5000 7400	70 63 80 64	— — — —	Excellent.	Typical post-menopausal thyrotoxicosis. Treatment ceased end October, 1947. Examined 29/7/48, normal.
Miss B.M.D. 131 56 years 23/11/47 1 year	19/11/47 8/12/47	+14 +11	120 122	96 100	4800 —	51 —	2 —	Febrile reaction. Good.	Symptoms followed pneumonia. Small gland. Febrile reaction tenth day, so gave propyl thiouracil. Went back to country. July 1948, was well.
Mrs. D.D. 132 53 years 2/4/47 9 months	9/12/46 13/3/47 8/5/47 22/5/47	+34 +49 +1 -1	— 123 131 133	— 100 72 64	— — 6400 —	— — 59 —	— — — —	Good, but relapsed.	Was given iodine for some weeks; Improved at first and then grew worse. Treatment commenced 2/4/47. Doctor wrote June, 1948, to say she had had a relapse. Treat- ment is being resumed.
Miss O.E. 133 54 years 9/3/48 2 years	5/6/47 19/6/47 21/7/47 3/3/48 9/6/48	+8 -2 -7 +1 +23	137 140 139 146 123	72 72 80 80 —	4800 4550 4100 — —	61 58 56 — —	— — — — —	— — — — —	— — — — —
137 57 years 21/2/48 1 year	21/2/47 17/3/47 26/4/47 10/5/47	+75 +58 +28 +2	119 125 134 134	120 100 86 80	8000 8000 7000 7000	— — — —	— — — —	Excellent.	Had lost two stone in weight and was unable to carry on duty as nurse. Treated by own doctor under direction. Became slightly subthyroid, but on 27/10/47 was normal.
Mrs. J.C.G. 138 54 years 9/3/48 2 years	14/6/47 19/7/47 23/8/47 15/3/48 7/4/48 29/4/48 17/5/48	-9 +0 -9 +56 +9 -24 -17	135 138 145 129 131 138 145	66 70 66 — 72 66 72	— — — — — 4150 4800	— — — — — 50 54	— — — — — — —	Continuing treatment.	Had developed pronounced exophthalmos over last year or so. Because of low leuco- cyte count was given liver extract. Became subthyroid, but condition cleared quickly with <i>Thyroidium Siccum</i> . July, 1948, practically normal.
Mr. T.M.G. 154 53 years 18/12/47 4 months	2/9/47 20/3/48 12/6/48	+27 +12 -3	112 130 129	120 90 84	— 11400 —	— — —	— — —	Good, but continuing treatment.	Loss of weight and palpitation. In October, 1947, was given 0.8 gramme methyl thiou- racil daily. After two weeks had urticaria and joint pains, so treatment was stopped. When examined in December had fibrilla- tion, oedema of the legs and lungs and large liver. Tolerated correct doses well, and change for better was dramatic.
Mrs. E.I.L. 155 40 years 15/7/47 2 years	-4/47 8/8/47 21/8/47 4/9/47	+30 +24 +5 +6	111 — — 121	126 — — 121	6650 6800 10000 5250	58 72 65 74	3 2 2 5	Excellent.	Loss of weight two years. In last six months more nervy, tremor, eyes prominent and gland enlarged. Expanded well. Treat- ment ceased at end of June, 1948, when he was apparently normal.
Mr. H.C.L. 159 65 years 26/11/47 3 months	28/11/47 23/1/48 18/3/48 8/11/47	-1 -3 -2 +40	120 125 121 114	84 76 72 98	7500 — — 9950	69 — — —	— — — —	Poor. Continuing treatment.	Lost 28 pounds in weight in three months. Glycosuria. Has renal calculus. Has had several attacks of renal colic, also inter- mittent glycosuria. Doubtful whether he keeps to treatment. On 20/4/48, felt better.
Mr. B.M. 165 53 years 25/2/47 3 months	25/2/48 11/3/48 25/3/48	-6 +20 +8	122 119 116	84 132? 118?	6800 — 4800 5500	— — 67 61	— — 7 —	Excellent.	In past three months lost 15 pounds in weight, very nervy and breathless <i>et cetera</i> . Fibrilla- tion. Treatment commenced two weeks before basal metabolic rate estimation available. Has done very well after seven months' treatment under her doctor in country.
Miss K.McA. 168 60 years 22/10/47 1 year	-4/47 -19/47 28/11/47 10/1/48	+24 +28 +9 -12	— 161 160 158	? ? 84 72	9200 11200 13000 9000	60 62 62 57	— — — —	Excellent.	For six months treated with rest, sedation, some iodine. Started treatment 28/10/47 and improved rapidly. Had fibrillation. Small thyroid. On 13/5/48, pulse rate 80 per minute, 166 pounds in weight. Feel and looks well.
Mrs. A.McR. 169 52 years 4/8/47 6 months	14/8/47 28/8/47 11/9/47 20/9/47	+40 +9 -6 -11	121 125 128 131	108 — 72 72	8400 8000 8400 7300	53 42 45 37	3 2 6 —	Excellent.	Acute thyrotoxicosis with enlarged gland and loss of 20 pounds in weight in three months. Given iodine. Responded well and thyroid cleared quickly on administration of <i>Thyroidium Siccum</i> , 29/9/47. Examined 23/7/48, pulse rate 80 per minute, weight 138 pounds. Normal.
Mrs. M.A.N. 180 64 years 25/2/47 3 years	4/2/47 18/3/47 28/4/47 18/6/47	+35 +18 -6 +3	121 124 130 144	118? 100? 80 74	7000 5600 8000 6500	55 65 66 79	5 2 2 1	Excellent.	Is arteriosclerotic and hypertensive. Fibrilla- tion. Lost 47 pounds in three years. Has made a remarkable recovery. In June, 1948, reported he was once more leading an active life. Pulse rate 80 per minute.
Mr. J.S.R. 183 53 years 28/10/46 9 months	19/9/46 23/10/46 28/10/46 17/12/46	+46 +27 -16 -6	120 122 127 130	114 90 76 72	— 5000 5600 5400	— 37 59 43	— 8 — 3	Excellent.	Post-menopausal type of thyrotoxicosis. Subthyroid January, 1947, but condition cleared with <i>Thyroidium Siccum</i> . Since July, 1947, no treatment. In December,<

TABLE III.—Continued.

Case Number; Age (Years); Date Seen; Length of History.	Date.	Basal Metabolic Rate per Centum.	Weight. (Pounds.)	Pulse Rate per Minute.	Leuco- cytes per Cubic Milli- metre.	Percentage of Neutro- phils Cells.	Percentage of Eosino- phils Cells.	Result.	Remarks.
Class IV. Adenoma. Seven Cases.									
95	13/3/47	+49	120	136	8400	63	—	Fair.	Treated May, 1944, for colloid goitre, and given thyroid substance and iodine. Had enlarged gland for 15 years. Carried on treatment to July, 1947, when an adenoma developed. Much worry, and in August, 1947, developed an acute toxic condition which proved refractory. Operation advised.
39 years	13/9/47	+69	116	140	8700	78	—		
8/3/47	18/10/47	+36	118	114	8400	82	—		
8 months	12/11/47	+34	126	100	6100	65	—		
Miss B.E.T.	19/12/47	+32	125	80	7000	66	—		
	23/1/48	+25	126	100	7300	70	—		
	23/3/48	+23	133	94	6900	73	—		
	25/5/48	+15	130	84	8400	76	—		
	20/7/48	+9	136	86	8600	68	—		
125	11/11/47	+38	121	140	—	—	—	Good.	Is hypertensive, diabetic and arteriosclerotic. Has had goitre 20 years. Toxic symptoms over last 12 months.
74 years	30/1/48	+21	125	84	7300	72	—		
17/12/47	11/3/48	-7	132	70	6600	62	—		
1 year	10/5/48	-4	143	80	6000	60	—		
Mrs. M.C.									
143	16/4/47	?	182	126	—	—	—	Good.	Had goitre since a youth. Lost 14 pounds in weight, nervy, palpitation, diarrhoea and gland enlarged in last nine months. Treatment started at once, two weeks before basal metabolic rate estimated. On 21/8/47 was back to normal.
65 years	28/4/47	+5	186	108	6100	66	1		
16/4/47	23/5/47	+4	191	90	6200	62	6		
9 months	15/8/47	?	196	80	7000	—	—		
Mr. G.I.									
152	1/4/47	+27	109	130	4700	49	5	Good.	For seven years has had adenoma of left lobe, increasing in size. Lost 63 pounds in weight. Treated with iodine and sedatives, and for a diseased heart. Has grossly enlarged heart, mainly left ventricle, and huge veins on chest wall. No intrathoracic gland visible by X rays. Character had altered and she had become slovenly. In June, 1948, was a different person. Weight 130 pounds. Felt splendid. Refuses operation. Ceased treatment April, 1948.
53 years	21/4/47	+33	109	96	4000	54	12		
27/3/47	29/4/47	—	111	—	3500	30	6		
7 years	8/5/47	+27	107	88	7200	77	2		
Miss E.L.	20/5/47	+3	107	80	4600	51	10		
	20/6/47	-2	112	80	7300	60	4		
	31/7/47	-6	119	80	7600	61	6		
164	-10/47	+21	140	160?	—	—	—	Good.	Two years ago was given iodine and sedation for 18 months. Lost 34 pounds in weight and since then another 14 pounds. Severe fibrillation. Treatment started 10/11/47. Adenoma of right lobe became evident. Operation advised, 16/6/48, as she was then very well.
56 years	14/12/47	+5	143	90?	Reported as normal	—	—		
10/11/47	14/1/48	+6	143	84?	7200	30	—		
2 years	25/3/48	+2	152	80	8000	76	—		
Mrs. H.M.	7/6/48	-6	163	78	—	—	—		
178	4/10/47	+41	94	120?	6000	39	1	Good.	Chronic thyrotoxicosis of many years' standing with a multiple adenomatous thyroid. Has had a lot of iodine. Gland has enlarged lately, and symptoms worse, with fibrillation. Remarkable general improvement by March, 1948, pulse rate 84 per minute.
66 years	17/10/47	+30	100	110?	6200	53	5	Continuing treatment.	At first there appeared to be an acute hyperplastic gland, but when swelling subsided definite adenomata were palpable. October, 1947, operation advised but refused. Left eye always more prominent than right. After a relapse in February, 1947, agreed to operation; performed 12/5/47. Examined 21/7/48, well except for eyes.
Many years	6/11/47	+17	110	78	5300	52	2		
Mrs. L.R.	24/11/47	-1	108	80	5200	50	4		
190	9/7/46	+23	112	120	6000	71	6	Fair.	
44 years	2/8/46	+23	113	84	7000	59	7	Operation.	
19/7/46	20/8/46	+14	116	84	6600	45	9		
2 years	4/9/46	+4	120	80	8000	61	5		
Mrs. A.L.T.	2/10/46	-2	119	78	8000	65	3		
	4/11/46	+6	112	80	6200	64	2		
	9/12/46	+3	112	80	7100	67	4		
	25/2/47	+16	114	82	6000	52	1		
Class V. Recurrent. Eight Cases.									
85	25/3/48	+34	142	132	10600	—	—	Good, but continuing treatment.	Superior thyroid arteries ligated in England, 1939. Well until 1946. Thioracil given February, 1947, to June, 1947. Symptoms recurred December, 1947, with enlarged gland. <i>Thyroideum Siccum</i> given 16/6/48. Examined 6/8/48; condition good and gland receding.
23 years	17/5/48	+4	—	—	18000	52	—		
19/4/48	7/6/48	-7	143	100	8800	—	—		
9 years	13/7/48	-3	144	90	—	—	—		
Mrs. M.E.D.									
96	3/6/47	+38	102	96	5750	58	—	Fair, but continuing treatment.	Extremely nervous and psychotic. Has been under intermittent treatment with thioracil for over two years. Basal metabolic rate December, 1946, was +54%. Is asthmatic and has had great worries. Reacted to small doses of <i>Thyroideum Siccum</i> . Thyroid enlarged. In July, 1948, almost normal, but gland still enlarged. Should submit to operation.
48 years	8/7/47	+0	103	72	4800	52	—		
4/6/47	21/8/47	+2	103	76	4700	60	—		
2 years	24/10/47	-6	—	92	—	—	—		
Mrs. R.W.									
105	17/12/47	+52	105	120	—	—	—	Bad. Agranulocytosis.	Operated on 1938. Recurrence over last nine months and lost 40 pounds in weight. Treated by local doctor. In April had temperature of 105° F., thought to be pyelitis; was given sulphadiazine for two days and then penicillin. See special report in context.
47 years	4/2/48	+49	101	140	4000	—	—		
20/12/47	26/2/48	+52	—	—	8000	—	—		
9 months	16/3/48	+40	—	—	8000	—	—		
Miss D.A.									
139	-2/48	+19	98	102	5500	66	—	Continuing treatment.	When 24 years of age was treated with deep X rays for toxic thyroid. In last year symptoms have recurred. Treated with rest and sedation for three months.
29 years	10/6/48	+3	106	72	5000	68	3		
19/5/48	5/7/48	-14	107	68	5600	63	1		
1 year									
Mrs. M.E.G.									
145	5/11/47	+14	101	108	11200	77	—	Good.	Operated on for toxic goitre 25 years ago and six years ago. Symptoms recurred four years ago. Treated with rest and sedatives and iodine. Is hypertensive. Thyrotoxicosis controlled and condition improved.
57 years	17/12/48	+12	105	84	—	—	—		
13/11/47	20/1/48	+5	109	84	6000	67	—		
4 years	20/1/48	+5	109	86	4800	69	—		
Mrs. J.S.J.	11/5/48	-4	114	80	3200	60	—		
	14/7/48	-9	112	86	5600	65	—		

TABLE III.—Continued.

Case Number; Age (Years); Date Seen; Length of History.	Date.	Basal Metabolic Rate per Centum.	Weight. (Pounds.)	Pulse Rate per Minute.	Leuco- cytes per Cubic Milli- metre.	Percentage of Neutro- phils Cells.	Percentage of Eosino- phils Cells.	Result.	Remarks.
Class V.—Continued.									
147 34 years 21/7/47 Many years Miss M.H.J.	29/7/47 19/8/47	± 0 $+8$	164 166	84 104	5850 8250	62 63	—	Good.	Operated on for thyrotoxicosis when aged 30 years. Second operation a year or two later. Then in 1934 deep X-ray therapy when basal metabolic rate was $+49\%$. Has had varying ill health and basal metabolic rate has varied from $+7\%$ to $+33\%$, although put on 42 pounds after X-ray treatment. Went to country but carried on treatment under local doctor up to May, 1948. Examined 21/6/48; weight had come down to 136 pounds, and felt better than for many years.
158 42 years 9/9/48 6 months Miss G.M.	12/9/46 26/9/46 16/10/46 14/3/47 9/4/47 24/5/47	$+22$ $+6$ $+6$ $+33$ $+10$ $+1$	126 126 124 129 133 133	120 70 78 84 80 82	8100 8300 5700 10600 7000 8400	54 47 55 — 61 69	—	Poor, but continuing treatment.	Partial thyroidectomy 18 years ago. Left lobe of thyroid has grown in last six months, with usual toxic symptoms. Condition not satisfactory, and operation advised February, 1947. In October, 1946, and April, 1947, condition suggested hypothyroidism, although basal metabolic rate "near".
197 36 years 12/7/47 20 months Mrs. E.W.	1/8/47 15/9/47 28/10/47 16/7/48	-24 -5 -8 $+5$	132 125 128 127	88 72 88 80	7550 — — —	44 — — —	—	Good.	Had an operation in June, 1946, for toxic goitre after six months' thiouracil treatment. On 22/4/47, when three months pregnant, developed congestive heart failure; uterus emptied and sterilized. Has been given thiouracil ever since. When examined 12/7/47 looked ill and sub-thyroid. Was given <i>Thyroidium Siccum</i> and reduced thiouracil dosage. Had a very enlarged thyroid despite operation in 1946. Examined 30/7/48, remarkably well and in active work again. Pulse rate 80 per minute. Thyroid gland much reduced.

neurosis, neurasthenia and such-like nervous disorders, without any attempt to establish an accurate diagnosis by having an estimation of the basal metabolic rate made. In one case referred for an opinion, the patient had been receiving 0.2 grammes of methyl thiouracil continuously for ten months without any amelioration of the tremor, tachycardia or other nervous manifestations and without any check of leucocytes or basal metabolism. It was pointed out in an article by S. L. Spencer and myself¹⁰ that these "thio" compounds can be used as a test in doubtful cases; the patients are given about three weeks' treatment, and if they are not appreciably and obviously benefited one can feel fairly certain the condition is not thyrotoxicosis.

Attention has also been drawn to the necessity of regarding each patient with thyrotoxicosis as a separate and individual problem, and to the fact that correct dosage can be determined only by consideration of the basal metabolic rate along with the clinical condition of the patient, who must be examined at intervals of not less than two or three weeks for the first two months of treatment.

In the "thio" compounds we have one of the most potent drugs introduced for the amelioration or cure of a specific disease if used correctly and in the right type of case, so that it goes against one's grain to see such a wonderful remedy being prostituted by wrongful use.

Relapses.

In nine cases relapse of thyrotoxicosis was observed, and they are worthy of closer examination.

Case 13 has already been reported. The patient had nine months' treatment, but relapsed three months later with a basal metabolic rate of $+29\%$. The usual treatment was resumed, and two months later the basal metabolic rate had fallen to -5% and the pulse rate was 76 per minute, but the thyroid had enlarged. Maintenance dosage with *Thyroidium Siccum* was continued for fifteen months, when the basal metabolic rate was $+1\%$. The thyroid was only just appreciable, the pulse rate was 76 per minute and the patient felt and looked well. The long-continued treatment was at her own request, as she felt so well when taking it. She has remained well for four months since ceasing treatment.

In Case 50 the patient had in all eight months' treatment, at the conclusion of which the basal metabolic rate was -6% ; she had some enlargement of the gland and was advised operation, but declined as she felt so well. Relapse occurred eight months later when the basal metabolic rate was $+31\%$. She responded well, but agreed to operation, which was carried out three months after the relapse.

The patient in Case 78 ceased treatment herself after six months, as she felt so well. She did not report for twelve months, when she said her symptoms had recurred six weeks previously; her basal metabolic rate was $+33\%$. She responded quickly, and again ceased treatment herself after two months with the idea of resuming it if there was any recurrence. Being a nurse, she had her own ideas and refused to carry out instructions although remonstrated with.

One patient (Case 87) was not examined until she had had twelve months' treatment; she then had a very large goitre and her basal metabolic rate was ± 0 . Under appropriate treatment she improved remarkably in eight months, and the circumference of the neck went down from 40 to 34.5 centimetres. She was then advised to submit to operation, but as her asthma was troublesome and she felt well otherwise, she refused. She stopped taking her maintenance dosage four months later, and as her asthma was severe she was given ephedrine and potassium iodide. After seven weeks the thyrotoxicosis recurred, the basal metabolic rate was $+35\%$, and treatment was resumed. The neck circumference had gone down to 32.5 centimetres and did not increase. The response to treatment was quick, and a month later she said she felt better than for years, especially as her asthma had cleared.

This patient is continuing treatment, but should submit to operation.

The patient in Case 89 ceased treatment of her own accord after seven months, and a month later her basal metabolic rate was -7% . The symptoms recurred six months later, and the basal metabolic rate was $+39\%$. This followed a period of worry, overwork and broken sleep with sickness in the family.

This patient has only just resumed treatment, but should settle well as there is very little thyroid enlargement.

In Case 92, treatment was carried on for eleven months, but the patient still had a large goitre. The symptoms recurred seven months later, the basal metabolic rate being

+24%. She responded quickly to treatment and is to be operated on.

In Case 99 the patient had six months' treatment. Her symptoms recurred eight months later. She carried on treatment for fourteen months, as she refused operation. She has remained well since, and her thyroid has receded.

In Case 127 a relapse occurred while the patient was still on maintenance dosage in the fifth month after treatment. She had been given *Thyrodeum Siccum* since the fifth week. Her response to increased dosage of methyl thiouracil was good. She has agreed to operation and is being prepared for it, as she has a large goitre still.

In Case 132 the patient continued the treatment for seven months and then ceased, as she felt so well. Her symptoms recurred six months later, with a basal metabolic rate of +23%. She is improving rapidly, and the prognosis should be good, as the thyroid is only just palpable.

Prevention of Relapse.

On reviewing these cases, one finds that one patient relapsed during treatment, so should be excluded, as what one wishes to determine is when and why relapse occurs after treatment has been completed. Six were in Group II—that is, between twenty-five and forty-five years of age—and all but one (Case 78) had large glands persisting and long histories of one to three years before coming to treatment with methyl thiouracil. One patient (Case 78) had too short a period of maintenance, owing to her own wilfulness. Two patients in Group III—that is, aged over forty-five years—had small thyroids, but had treatment for only seven months. The lesson learned from these cases is that when large goitres have been present for some time before treatment is instituted, and when the goitres do not subside after a reasonable period, operation should be advised as soon as the thyrotoxicosis is under control. In the over forty-five years group it is advisable to continue maintenance dosage for six months after the basal metabolic rate has been restored to zero or a *minus* figure. The time at which relapse occurs seems to be in the majority of cases between six and nine months after treatment stops, so all patients should be warned to report at once if any of the old symptoms recur, and in any case to report for a check-over in about nine months.

As 163 patients had concluded treatment the recurrence rate is just on 5%—a figure slightly higher than was anticipated, but one which we now know can be lowered greatly by operating on the persisting large hyperplastic thyroids. Elmer Bartels quoted figures showing a 48-5% relapse rate, but points out that in the majority of cases treatment had been for relatively short periods.

In order to avoid relapse it seems essential to regulate the initial dosage to each patient and to avoid increasing thyroid hyperplasia by overdosage. When large glands are present, *Thyrodeum Siccum* should be used at an early stage so as to prevent further enlargement of the thyroid and to help induce resolution of the hyperplasia already present. If after six months of such treatment the gland has not regressed appreciably, it is wise to advise operation.

The maintenance of a zero or *minus* metabolism throughout the period of maintenance dosage seems essential; the minimum period for this is four months in the cases in which an "adequate response" to treatment has been obtained within six to eight weeks, and six to nine months in the cases in which the reaction is slower. Adjuvant therapy and correct diet play important parts in restoring the patients to normal and keeping them so.

Conclusions.

Further experience with methyl thiouracil confirms the conclusions arrived at in the article published in *The Medical Journal of Australia* on July 26, 1947, and they are repeated with minor modifications as follows:

1. Methyl thiouracil is superior to other "thio" preparations in the treatment of thyrotoxicosis.
2. The minimal dose which will produce the desired effect is the safest dosage.
3. Each patient presents an individual problem and requires constant supervision during the whole course of treatment.

4. The major factor in securing permanency of control of thyrotoxicosis is the maintenance of a zero or *minus* metabolic rate for a minimum of four months before cessation of treatment.

5. Adjuvant therapy in the form of sedation, mixed vitamin therapy and an adequate balanced diet is necessary.

6. A diet rich in protein is necessary if there has been any undue loss of weight or muscle wasting; B group vitamins are also necessary.

7. Regular leucocyte counts are imperative, and estimations of the basal metabolic rate for the first six to eight weeks are advisable. Follow-up should be carried out for six to nine months after treatment is suspended.

8. The minimal period of treatment should be six months if no *Thyrodeum Siccum* has been given, and if so it should be nine months.

9. The best results are obtainable in cases of acute hyperplastic toxic goitre, and the earlier the patients come to treatment, the more satisfactory is the final result. Present figures indicate that apparent cure without surgery can be obtained in 81% of cases when the technique as outlined is followed faithfully, but control of thyrotoxicosis is obtainable in 91% of cases.

10. Gland hyperplasia and exophthalmos of moderate degree can be cleared in most cases of not more than four months' duration by the administration of *Thyrodeum Siccum* during the maintenance period of dosage. If a large gland persists, operation is advisable.

11. Patients with toxic adenomatous goitre respond satisfactorily to this form of treatment, but if operation is possible they should be advised to have surgical treatment as soon as control of toxicity is secured. It is necessary in all such cases to have a Quick's hippuric acid excretion test carried out to determine the detoxicating function of the liver; if this is depressed it renders operation a risky procedure.

12. The previous administration of iodine doubles the average time to secure "adequate response" and lengthens the total duration of treatment.

13. Mild idiosyncratic reactions may occur, but seldom necessitate suspension of treatment for more than twenty-four to forty-eight hours.

14. Febrile reactions should be regarded as a warning of a more severe toxic reaction. Leucopenia should also be regarded with suspicion, as agranulocytosis, although rare, must always be kept in mind.

15. Eight cases of relapse some months after cessation of treatment have been observed—that is, 5% in the total of patients who have completed treatment. The main factor in relapse is a persistent enlarged gland.

16. Misuse of "thio" drugs is common, and they should not be ordered without a proven diagnosis of thyrotoxicosis, as they are valueless in neuroses. Correct dosage also is essential.

Acknowledgements.

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Reports of Cases.

PRIMARY EPITHELIOMA OF THE MALE URETHRA.

By C. W. R. PRICE,
Perth.

EPITHELIOMA of the male urethra is a relatively rare condition. Kreutzmann and Collop⁽¹⁾ reviewed the literature in 1938, finding 143 cases and adding two of their own. They classified the cases into those arising in the anterior portion of the urethra and those of the posterior portion of the urethra, the latter including growths of the bulbar portion. The mortality rate in the first group was 25% compared with 75% in the second. Early diagnosis was the exception.

These authors noted that, of the patients who recovered, only 4% underwent dissection of the inguinal glands, and whether these growths were in the "anterior" or "posterior" group was not stated. Adding that only inflammatory changes were found in the excised glands in these cases, they nevertheless decided that the inguinal dissection was always indicated in addition to the penile amputation. However, they did not consider that castration was necessary.

Hickey and Reese Coleman, junior,⁽²⁾ reported a case in which the primary growth was in the *fossa navicularis* and gross secondary deposits were present in the groins and in the abdominal and thoracic parietes. Several other cases were reported subsequent to 1938 in journals to which I have no access.⁽³⁾⁽⁴⁾⁽⁵⁾

Sir John Thomson-Walker⁽⁶⁾ noted traumatic stricture as the common cause. Leucoplakia resulting from chronic urethritis was incriminated by Halle (quoted by Thomson-Walker) as leading to the development of squamous epithelioma.

The growth is said to develop usually on the proximal side of a stricture. It spreads along the urethral mucosa and outwards into the *corpus spongiosum*. External fistulae commonly form.

The basic symptoms are increasing difficulty in micturition, sometimes acute retention of urine, and hemorrhage on instrumentation or occasionally spontaneously.

A hard, increasing area of induration at the site of the stricture is the most significant sign. This swelling may be incised in mistake for periurethral abscess, especially when it is accompanied by urethral discharge.

Urethroscopy may enable the growth to be seen. Lymphatic metastasis (inguinal and iliac) is late, according to Thomson-Walker.

The condition may be rapidly fatal or may progress slowly over a number of years.

Local resection of the urethra with reunion of the cut ends has been performed, but partial or complete amputation of the penis according to the site of the tumour holds out the best hope of cure. Castration or groin dissection, or both, was performed in some of the cases.

The following case underlines the facility with which the diagnosis may be ignored over a long period. The means by which it was finally attained, while noteworthy, reflect no credit on the author.

Clinical Record.

E.H., aged seventy-five years, was first admitted to the Fremantle Hospital in October, 1946, suffering from acute retention of urine. He had had increasing difficulty in micturition for some months, but had not sought medical advice for the condition. He denied a history of venereal disease, but had vague recollections of an injury to his perineal region many years before. He was found to have a urethral stricture of a very resilient character at the level of the peno-scrotal junction. Cystoscopic examination revealed no prostatic enlargement. Urethroscopy was not performed.

Treatment by bouginage over the ensuing weeks was accompanied by many vicissitudes, as the "resilience" of the stricture made weekly instrumentation necessary. A temporary cystostomy had to be established in December for acute retention of urine following immediately upon dilatation. However, normal micturition was shortly reestablished and the fistula closed.

In April, 1947, palpable induration was first noted at the level of the stricture. This was believed to represent periurethritis, and beyond the offering up of a prayer that extravasation would not next appear, little notice was taken of it.

In the next three or four weeks the induration slowly increased, and its consistency became so hard and craggy that it was shown to one or two people with the jocular observation that it felt very like a malignant tumour. However, because of my ignorance that diagnosis was not seriously entertained.

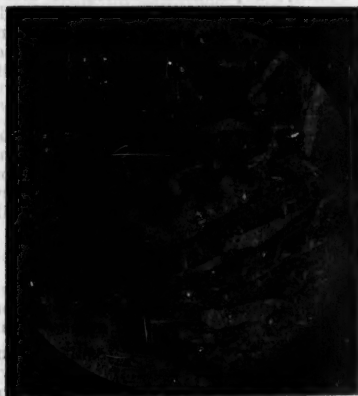


FIGURE I.
Low-power view of the tumour.



FIGURE II.
High-power view of the tumour; C, transitional epithelium in proliferation.

In the middle of May, because of the increasing difficulty and pain associated with micturition and the short-lived effect of dilatation, the patient accepted the proposal of permanent suprapubic cystostomy. At operation on May 20 the bladder was distended by means of a silver catheter, upon the removal of which a small piece of tissue was discharged from the urethra. This specimen was sent for pathological examination, and Dr. S. N. Michaels reported upon it as follows:

Sections disclosed a highly malignant epithelial tumour arranged in a loose alveolar pattern and almost certainly derived from the urethral epithelium (transitional in type). The cells showed numerous mitoses and tissue reaction was minimal. Urethral carcinoma.

In view of this finding radical amputation of the penis was performed on June 5. The stump of the urethra was sutured in the perineum. Neither groin dissection nor castration was performed.

Dissection of the groin was omitted for the following reasons: (i) the patient's age was seventy-five years; (ii) a functioning suprapubic cystostomy was present, to make more hazardous the healing of a normally poorly

healing area; (iii) the situation of the primary growth led me to believe that pelvic glandular metastases would probably precede those in the groin.

The wound healed by first intention, and in a short time the suprapubic sinus closed spontaneously. When he was discharged from hospital on July 21, the patient was able to hold his urine for four hours at a time, and he felt so well that he expressed an intention of competing in the women's section of the Olympic Games.

Dr. Michaels reported on the excised specimen as follows:

Sections showed a widely infiltrating epithelial growth made up for the most part of moderate sized polygonal and cubical cells and broken up by the trabeculae of the corpus spongiosum. The portions examined were not so obviously transitional cell tumour as the part removed directly from the tumour but sufficient resemblance remained to trace the continuity between the two parts.

E.H. was examined again in September. He complained of some backache, so that X-ray films were taken of his spine as well as of his lungs. These showed no evidence of metastasis. In November, when he was next examined, small firm gland masses were palpable in each groin. In October, 1948, he was reported as being very well, but he did not present himself for examination.

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THE PECULIAR EFFECTS OF IMPALEMENT ON THE HANDLE OF A MOTOR-CYCLE.

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THE injuries which occurred in the case which prompts these observations appear to me to be so remarkable that I feel some record should be made of it.

Clinical Record.

On March 25, 1948, at 7.30 a.m., K.B., a robust young man, aged twenty-three years, was involved in an accident while riding his motor-cycle. The handle of his machine struck him on the anterior abdominal wall in the region of the left lower quadrant.

When examined at 10.30 a.m. after his admission to hospital, he appeared pale and shocked, with a pulse rate of 88 per minute. There was bulging of the abdominal wall in the left iliac fossa with an appearance of deep bruising, though there was no breach of the skin—indeed, not even an abrasion. Palpation of the remaining areas of the abdomen revealed a degree of generalized rigidity, and at this stage the patient volunteered that he had pain in the shoulders, though there was no evidence of injury there or elsewhere, other than the abdomen. Some crepitus was then noticed on palpation of the abdominal swelling (stimulating surgical emphysema), and the resident medical officer, Dr. W. Rogerson, stated that he had elicited an impulse on coughing which led him to regard this swelling as a hernia. I took it to be a hematoma, but in any case it was plain that an intraabdominal rupture had occurred.

A blood transfusion was started and the patient was moved to the operating theatre. Under ether anaesthesia,

an oblique left lower abdominal incision was made over the swelling. I planned to carry out a muscle-cutting exposure (Rutherford Morison) after evacuating the hematoma. This proved unnecessary, for as soon as the skin incision was made, omentum prolapsed into the wound. The remaining layers of the abdominal wall (including peritoneum) had already been opened—in fact, the incision was a cleanly made muscle-splitting McBurney's approach of generous dimensions, extending from the rectus border to the level of the anterior superior iliac spine. The remaining parts of the operation were performed through the convenient exposure thus presented, without further enlargement or modification.

The omentum was found to be bruised and a few bleeding points were secured and tied. A length of small bowel was then revealed, about a foot long, with its mesentery ripped off and bleeding. There was a perforation the size of a sixpenny piece in the centre of this loop with gas bubbles issuing from it, no doubt accounting for the "crepitus" which had been observed on clinical examination. This loop was non-viable from detachment of its blood supply, and it was therefore resected with end-to-end anastomosis.

A large tear was then discovered in the mesentery of the sigmoid colon, with free hemorrhage from vessels in the torn mesentery. These were secured, and the gap in the mesentery was repaired. The peritoneal coat of the colon itself was torn off irregularly over a distance of two or three inches. This was patched up by oversewing, and it was observed with satisfaction that the damaged parts of the colon appeared viable despite these injuries.

Finally, a persistent oozing of blood was found to be coming from the lacerated medial border of the left psoas muscle, where a hole had been "bored", admitting the finger, right alongside the left common iliac artery, the pulsations of which were felt immediately adjacent. A drain tube was passed down to this and the abdominal wound was closed in layers.

Convalescence was uneventful, although, of course, the usual ancillary measures of penicillin and sulphonamide therapy, the intravenous administration of saline solution *et cetera* were fully employed. In a few weeks the patient was perfectly well again, with a soundly healed abdominal wound.

Comments.

When the same peculiar accident produces a characteristic injury on a second occasion, it seems worth mentioning for the benefit of any future victims.

In 1940 I saw a similar result in a man who was struck on the unguarded abdominal wall by the handle of his motor-cycle—namely, a rupture of small bowel,⁽¹⁾ though without the added feature of traumatic hernia of the abdominal wall. That this should have occurred in the present case is a remarkable tribute to the resilience of the human skin. One feels almost tempted to refer to the lesion as the "motorbike-handle" syndrome.

In the last war, dispatch riders commonly wore a stiff leather abdominal corset from groins to costal margin, which may have served to protect them from this particular injury, despite the very high accident rate among these men on motor-cycles. I understand that the Motor Cycle Association has a regulation requiring such body-belts to be worn by any of its members taking part in a "motor-cycle scramble", and it would seem to be a wise precaution. In old days, I am told, similar injuries occurred from impalement on the shaft of a buggy or jinker.

Though non-penetrating trauma to the abdomen usually causes rupture of a solid viscus, it would seem that impalement injuries of this type are more likely to result in a rupture of the bowel. Amongst the hundreds of motorcyclists involved in collisions each year, it would be natural to suppose that from time to time this particular sequence of events will occur again.

Reference.

- (1) R. S. Lawson: "Two Cases of Traumatic Rupture of the Jejunum without Penetrating Wounds of the Abdominal Wall", *The Medical Journal of Australia*, Volume II, 1940, page 408.

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Reviews.

THE NEUROLOGICAL BASIS OF MENTAL DISORDER.

Most neurologists would agree that a psychiatrist is none the worse off for some knowledge of pure neurology, and that apparently is the object behind the publication of the book by Cobb.¹ At the same time many neurologists will be surprised to discover how elementary such knowledge apparently need be. However, since the publication under review is now in its fourth edition it must meet a demand. The general scheme of the book is to provide a simple synthesis of neuroanatomy, neurophysiology and neuropathology upon which an intending psychiatrist can base his views on mental disease. The book runs briefly through the general organization of the central nervous system, and great attention is naturally given to the question of neurological levels. In this context the author's views are somewhat out of date since he still apparently believes in an "old motor system" with its highest level in the striatum. Some of his statements regarding anatomical detail are erroneous. For example, he claims that one-third of the fibres of the pyramidal tract come from the Betz cells, whereas Larsell has shown pretty conclusively that the number of fibres so derived is probably not greater than 3%. Also, the author's views on the functions of the cortical areas associated with motor activity betray more confusion than the present state of knowledge really warrants. The section on the cerebral circulation is too general for detailed consideration, but some exception may be taken to the statement that there are no end arteries in the human brain, since recent investigations seem to indicate that the particular vulnerability of the hippocampus to such toxic agents as carbon monoxide are probably due to this very arrangement. The concluding chapters on neuropathology, psychological concepts and psychopathology all seem to be too cursory to be really valuable to the serious psychiatrist. However, perhaps we are over-estimating the neurological requirements of the psychiatrist, and this may be the very book he is looking for.

TUBERCULOSIS.

In his introduction to "Tuberculosis" Dr. F. M. Pottenger warns that in its pages he frequently questions accepted ideas and states that he possesses "very little phthisiophobia".²

Phthisiogenesis occupies the first hundred pages. Endogenous spread rather than an exogenous reinfection is regarded as the source of the secondary stage of the disease and the opinion is held that most infections occur as the result of swallowing infected material rather than through its inhalation. Dr. Pottenger regards apical infection as so located because of compression of the apex by the thoracic cage and because of poor aeration and sluggish blood supply of this area of the lobe.

Diagnosis of pulmonary tuberculosis is discussed in seventy-eight pages and it is in this section of the book that Dr. Pottenger departs most widely from accepted ideas. He does not accept what he calls "swivel-chair descriptions" or explanations, but tries to work it out for himself. The author commenced the practice of medicine when clinicians had to rely almost entirely on the evidence obtained through their eyes, fingers and ears. They had not the opinion of the radiologist nor the modern bacteriological methods to assist them.

In the second paragraph of page 237 Dr. Pottenger describes the information he can gather through palpation. "Through palpation one may feel deeply within the chest and outline and limit organs of different degrees of density caused by pulmonary and pleural pathology. Infiltration; cavitation; chronic fibrosis; complications such as pleural inflammation, pleural thickening, pleural effusion, empyema,

pneumothorax, and emphysema all give sensations to the palpating finger which depart from the normal as much as those conveyed on percussion, and which differ from each other to such a degree that the palpatory sensation may suggest the diagnosis."

That Dr. Pottenger does rely for assistance on the radiological and bacteriological examinations is clear from the following: "I have always taught that, given a clinical history suspicious of active tuberculosis without positive signs on auscultation and percussion, the clinical history should bear most weight in examination until an X-ray may be made and the sputum examined." After reading the chapter on auscultation we are inclined to agree with the author when he writes, "my discussion in this chapter may be more confusing than enlightening".

Wise advice is given on the place of radiology in diagnosis—that a decision must not be based on shadows alone and that the X-ray evidence should be used as one of the aids to diagnosis. The radiograms are well reproduced and the book is printed in very readable type on glossy paper.

Dr. Pottenger is a firm believer in the value of tuberculin as a therapeutic agent and he uses it for both exudative and proliferative lesions. He reminds his readers that W. Neumann regarded tuberculin as of particular value in the treatment of pleurisy with effusion. "Its harmlessness depends on its being used intelligently." Vaccination with "B.C.G." is supported for those who are exposed to risk of infection.

In a very thoughtful final chapter on "Future Programme" Dr. Pottenger says he is not a believer in the highly infectious nature of tuberculosis and deplores the unnecessary fear of the tuberculous patient who, if he follows the usual rules of hygiene, is a very slight danger to anyone. The importance of case-finding is stressed, also the value of taking an X-ray photograph of the lungs of all in-patients of hospitals which enables a large number of undiagnosed lesions in elderly patients to be detected.

"Public health officials in California have the power to arrest and incarcerate intractable patients, but they do not often resort to its use. The fact that they have the power is sufficient in most instances."

The lesson that the author teaches in this well-documented monograph is that we need to treat the patient and not just the tuberculous disease from which he happens to be suffering and that we can, with confidence, expect preventive measures to liberate "the human race from the ravages of tuberculosis".

CLINICAL DIAGNOSIS BY LABORATORY METHODS.

It is a pleasure to review the eleventh edition of "Clinical Diagnosis by Laboratory Methods" written by J. C. Todd and A. H. Sanford with the collaboration of G. G. Stilwell.³ In his preface, Professor Sanford acknowledges the help of his associates at the Mayo Clinic in the work of revision. First published in 1908, this book, described in its subtitle as a working manual of clinical pathology, has been a valuable friend and ally to two or three generations of pathologists, medical students and laboratory workers. Successive editions have kept pace with the remarkable developments of clinical pathology during the past forty years. Those who have used the ninth (1939) and tenth (1943) editions will remember, among other things, the very good introductory chapter on the use of the microscope, the clarity, common sense and good judgement shown in the selection and presentation of material, and the excellent drawings accompanying the chapters on the sputum and on the urine respectively. In its present form the book has been revised completely; the new arrangements maintain and enhance the general good sense of previous editions and the result is quite outstanding. Of course, a compendium of this type, however good, suffers by comparison with more specialized books on individual subjects. The section on bacteriological methods, for instance, is somewhat superficial in spite of its excellent photographs of bacterial colonies. But one must remember that this is a working manual, not a text-book.

The former chapter on serodiagnostic methods has been divided into three short chapters. The second of these

¹ "Foundations of Neuropsychiatry", by Stanley Cobb, A.B., M.D.; Fourth Edition; 1948. Baltimore: The Williams and Wilkins Company. Sydney: Angus and Robertson, Limited. 9" x 5", pp. 274. Price: 18s. 6d.

² "Tuberculosis: A Discussion of Phthisiogenesis, Immunology, Pathologic Physiology, Diagnosis and Treatment", by Francis Marion Pottenger, A.M., M.D., LL.D., F.A.C.P.; 1948. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical) Proprietary, Limited. 9½" x 6½", pp. 598, with illustrations. Price: 90s.

³ "Clinical Diagnosis by Laboratory Methods: A Working Manual of Clinical Pathology", by James Campbell Todd, Ph.B., M.D., and Arthur Hawley Sanford, A.M., M.D., with the collaboration of George Giles Stilwell, A.B., M.D.; Eleventh Edition; 1948. Philadelphia and London: W. B. Saunders Company. Melbourne: W. Ramsay (Surgical) Proprietary, Limited. 9½" x 6½", pp. 966, with many illustrations, some of them coloured. Price: 52s. 6d.

deals with serological tests for syphilis, including the Kolmer modification of the Wassermann reaction, the Eagle complement fixation test, and the flocculation tests of Kline, Mazzini, Kahn, Hinton and Eagle. The text of this chapter conforms to that of the standard procedures used by the originators of the various methods as published by the United States Public Health Service. The accounts not only of the tests proper but of the preparations of antigens and other reagents are extremely thorough and quite complete. Another new feature is the chapter on medical mycology which is particularly well illustrated. Several new photomicrographs have been added to the chapter on blood, and also four coloured plates painted by Dorothy Booth and commended by the authors in their preface. We cannot agree with this commendation; some of these coloured pictures show an exaggeration that almost amounts to caricature. The section on parasitology is very good and well illustrated. A short chapter on antibiotics is rather rudimentary, describing only the slide-cell technique.

On the whole, this is a pleasant, practical, and eminently "consultable" book. It is quite well documented, so that while some sections are necessarily brief, the lists of references provide a guide to the literature whence fuller information can be obtained.

A TEXT-BOOK OF GYNÆCOLOGY.

AFTER a lapse of only four years, the third edition of Novak's "Textbook of Gynecology" has superseded the former publication. In form and content it follows closely the pattern of its predecessor, but justifies its appearance by the inclusion of all that is new in gynecology, particularly in relation to treatment with modern antibiotics. In the diagnosis of carcinoma of the uterus, the vaginal smear technique of Papanicolaou and Trant finds mention. There are additional coloured plates, and the illustrations generally are numerous and constitute a great feature of the book. All members of the profession who have an interest in the subject are familiar with Novak's famous classification of ovarian neoplasms, and those who do not possess a copy of the second edition would do well to add this publication to their library.

It is a first-class comprehensive treatise on non-operative gynecology.

A POCKET GYNÆCOLOGY.

IT is no easy task to condense the matter of a subject as large as is modern gynecology into a little book which can be read with ease and relied upon for authoritative information. This is what the author, S. G. Clayton, has admirably achieved in "A Pocket Gynecology". As stated in the short preface, it is an attempt to present the essential facts in a book that can literally be carried in the pocket. The author's claim that there has been strict economy of words, without omission of facts, is not exaggerated.

The subject is covered in eleven chapters from anatomy to gynecological treatment, and is presented under general headings, such as "Pelvic Injuries and Displacements", "Inflammatory Diseases", "Tumours", "Functional Disorders of Menstruation", "Dyspareunia" and "Sterility". The book is essentially a practical one, though aetiological theories and important pathological facts are not omitted. The material is fairly well up to date, and while information on treatment is brief and to the point, one gains no impression of undue dogmatism.

Several facts which too commonly suffer lack of emphasis are stressed in italics, such as "retroversion is a physical sign, not a disease", "excessive or irregular loss must be regarded as pathological", "many fibroids do not cause symptoms, and do not require treatment". It is also a wise observation that a woman with backache usually has something wrong with her back. The value of thyroïd in many gynecological conditions is emphasized by the author's mention of its use, often empirical, in eight places.

¹ "Textbook of Gynecology", by Emil Novak, M.D., F.A.C.S.; Third Edition, 1948. Baltimore: The Williams and Wilkins Company. Sydney: Angus and Robertson, Limited. 9" x 6", pp. 754, with many illustrations, some of them coloured. Price: 60s.

² "A Pocket Gynecology", by S. G. Clayton, M.D., M.S. (London). F.R.C.S. (England). M.R.C.O.G.; 1948. London: J. and A. Churchill, Limited. 7½" x 5", pp. 118, with illustrations. Price: 7s. 6d.

There are, of course, opinions on which general agreement is not found. Examples of these include the author's contraindication of the use of the curette for incomplete abortion, his use of the blunt curette for placental polypus, and his conservatism in the treatment of early septic abortion; the date of ovulation is estimated by counting forward from the last instead of backward from the expected menstrual period; a vertical instead of a transverse incision in the rectus sheath is mentioned after Pfannenstiel's incision.

The book is neatly set up and printed with but a half-dozen or so misprints. Its illustrations number only eighteen, but these are effective and well chosen. As the author intended, the book will undoubtedly be of help to the final year student in his revision and to the busy general practitioner.

CLINICAL PSYCHIATRY.

THE latest edition of "Modern Clinical Psychiatry" by Arthur P. Noyes has been largely rewritten and presents a much more dynamic approach than formerly to the neuroses and the psychoses, emphasizing the fact that similar psychological mechanisms are involved in a major and minor mental disorders. Throughout the book is stressed the necessity for close study and adequate understanding of personality types and reactions, even where there is an obvious organic basis for the disorder. The scheme of the book is orthodox. The early chapters are devoted to a discussion of the dynamics of behaviour, of mental mechanisms and motives, and of the causes and symptoms of mental disease. A chapter on biological constitution is followed by the examination of the patient. The following twenty chapters deal with the individual mental disorders and are succeeded by descriptions of physical therapies and a discussion of psychotherapy. A brief but adequate glance at child psychiatry terminates the book.

The treatment of the various disorders is dealt with lucidly, with much practical detail. The chapter on alcoholic psychoses especially will repay study by the general practitioner. The value of the approach by Alcoholics Anonymous is recognized, though the naïveté of their methods of thought is also recognized.

The author is uncompromising in his demand for a purely psychotherapeutic approach to the neuroses, and insists that no supporting sedation should be used in the treatment of anxiety states. He appears, therefore, to be inconsistent in his implied agreement with electrostimulation treatment in such cases.

Minor errors in the typescript have been repeated in the printed page; for instance, a solution of picrotoxin (one cubic centimetre containing three grammes) is given as the equivalent of a 0.3% solution. However, other errors are trivial, and do not detract from the value of the book which will repay reading by all who are interested in the subject.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Introduction to Diseases of the Chest", by James Maxwell, M.D. (London), F.R.C.P. (London); Third Edition; 1948. London: Hodder and Stoughton, Limited. 8½" x 5½", pp. 346, with illustrations. Price: 12s. 6d.

Deals with examination of the chest and gives a short account of chest diseases.

"Osteo-arthritis of the Hip-bone", by H. Warren Crowe, D.M., B.Ch. (Oxon.), M.R.C.S., L.R.C.P. (London); 1948. London: George Pulman and Sons, Limited. 9½" x 7", pp. 84, with many illustrations. Price: 35s. 6d.

An essay, mainly medical, based on a study of 500 cases.

"Modern Trends in Dermatology", edited by R. M. B. MacKenna, M.A., M.D. (Camb.), F.R.C.P. (London); 1948. London and Australia: Butterworth and Company (Publishers), Limited. 10" x 6½", pp. 452, with illustrations. Price: 55s. 6d.

The "modern trends" of dermatology are discussed by dermatologists and by men whose interests are not primarily dermatological.

"Modern Clinical Psychiatry", by Arthur P. Noyes, M.D.; Third Edition; 1948. Philadelphia and London: W. B. Saunders Company. Melbourne: W. Ramsay (Surgical) Proprietary, Limited. 9½" x 6", pp. 536. Price: 42s.

The Medical Journal of Australia

SATURDAY, DECEMBER 11, 1948.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

NATIONAL HEALTH IN THE UNITED STATES: A REPORT TO THE PRESIDENT.

At no time in the history of modern medicine has there been such a widespread desire on the part of the medical population in one country to know what is going on in the medical world of another. And probably never before has there been greater need for this knowledge. The World Medical Association is taking steps to secure reliable information on many aspects of medical life and practice in different countries and to make it available to its constituent medical associations; and within the confines of the British Commonwealth of Nations the same desire for knowledge is reflected in the enthusiasm shown recently in London in regard to the proposed inception of a series of annual British Commonwealth Medical Conferences. Knowledge brings understanding, and if understanding is to be deep, knowledge must be extensive. With an increase in knowledge it is possible to find patterns for progress and sometimes to be warned of likely disaster. Of course, conditions in one country may be essentially different from those of another, and what will suit the first may be quite out of place in the second. There are many reasons for differences, and these include such considerations as climatic conditions, temperament of the inhabitants and differences in stages of social development. These facts must be remembered when any attempt is made to draw conclusions from what is happening in a strange country and to apply them at home. It is sometimes useful to have a purely objective outlook, for this allows knowledge to accumulate and judgement to ripen before action based on discovered facts is taken. Sometimes no action is needed and intelligent interest alone justifies inquiries.

With these few words of introduction attention should be drawn to a report recently made to the President of the United States by Oscar R. Ewing, the Administrator of the United States Federal Security Agency. President Truman wrote to Mr. Ewing on January 30, 1948, asking him "to undertake a comprehensive study of the possibilities for raising health levels and to report to me, at your earliest convenience, upon feasible goals which might be realized by the American people in the next decade".

In the course of his letter the President remarked that he had repeatedly requested Congress to enact legislation designed to expand basic health services and to bring them within the reach of all the people. He added that the attainment of such a goal needed the cooperation of all sections of the community. Mr. Ewing's "letter of transmittal" to the President, which appears in the front of the report, is dated September 2, 1948—there has been no delay in the publication of the report. Mr. Ewing at the outset acknowledges the help received by him in the compilation of the document from the deliberations of the National Health Assembly which met at Washington at his instigation early in May, 1948. A short statement on this assembly was published in an editorial article in *The Journal of the American Medical Association* of May 8, 1948. In this article reference is made to Mr. Ewing's opening address, and first of all to his recognition of the fundamental importance of a high quality of medical education for the solution of every medical problem, secondly, to his emphasis on the necessity for consumer and professional cooperation in the development of adequate medical care at costs within the range of the mass of the people, thirdly, to his perception of the necessity for continued experimentation in the development of techniques of providing and distributing medical care suitable to the needs of a diversified population under varying economic conditions. President Truman was the only speaker at the opening banquet of the National Health Assembly. He "indicated again his concern over the health problems of the nation and his continued conviction that a compulsory sickness insurance system is an acceptable solution".

Mr. Ewing's opening chapter deals with the health of the American nation. He declares that 325,000 people in the nation die every year in spite of the fact that the knowledge and skill to save them are available, that 4,300,000 man-years of work are lost each year through bad health, that 27,000,000,000 dollars in national wealth are lost each year through sickness and through partial and total disability. He also recalls the fact that during the last war 5,000,000 men were declared to be physically or mentally unfit for the armed services of the country. He concludes that it is the nation's responsibility, and to the nation's advantage, to do its utmost to insure that all people everywhere attain the highest possible level of health. He goes on to state that the provision of health and medical services and the pursuit of health knowledge are not the only requirements for national health. In addition it is necessary to assume contemporaneous and parallel efforts to secure: (i) a steadily rising standard of living, assuring better nutrition, recreation and other contributions to healthy living; (ii) better educational systems; (iii) increased benefits for the aged and permanently disabled so that their minimal essential economic needs may be provided for; (iv) adequate housing for the people of the nation (this is stated to be fundamental); (v) increased understanding on the part of the people of the benefits of scientific medicine and public health methods. The general intention and scope of the report are shown by the "health goals" which are set out at the head of successive chapters. The first is as follows:

To increase our supplies of medical manpower until there is enough everywhere in the country to satisfy the health

and medical needs of all the people; to do this by expanding and establishing medical colleges, training schools and teaching hospitals until, by 1960, our annual production of medical manpower in all categories has increased by 40 to 50 percent.

In addition to the shortage of medical practitioners, there are even greater shortages among other allied groups—dentists, nurses, public health workers, technicians and pharmaceutical chemists. Among medical practitioners the greatest need is for trained psychiatrists and paediatricians, more than three times the present number of the former being needed and at least three times the present number of the latter. Nurses form the largest single group of health workers in the nation; there is a current shortage of 42,000. In one-third of the counties in the United States not a single full-time public health nurse was employed in 1947. The second "health goal" is stated by Mr. Ewing in the following words:

"To assure that there are enough hospital beds of all kinds everywhere to meet the people's needs, and to finance hospitals so that they may give the highest quality services; to accomplish this by doubling the number of hospital beds, adding at least 600,000 by 1960; by building such auxiliary health and community centers as are needed, particularly in rural areas; and by uniting hospitals and centers into regional chains so that the most remote regions will have full access to modern and scientific medicine."

This section of the report reveals what must be a surprising state of affairs. Outside of Federal hospitals there are only about 900,000 "acceptable" hospital beds in the entire country, against established need for twice that number. "Large areas of the country—including 40 percent of all counties—have no acceptable general hospitals at all." Other areas have facilities which meet only a fraction of the numerical need or which provide an inadequate service. Millions of the people are unable to use the hospitals in their communities, either because they cannot pay for services or because "discrimination or segregation closes the doors against them". The statement seems justified that the nation's hospitals "are completely inadequate to meet the needs of the people".

The third health goal is the one round which most interest will centre:

"To assure that every individual without regard to his economic status has full access to adequate medical services for the prevention of illness, the care and relief of sickness and the promotion of a high level of physical and mental health."

Mr. Ewing is at great pains to show that "lack of wealth means lack of health". He discusses voluntary health insurance and shows that at a maximum only about half the families in the United States can afford even a moderately comprehensive health insurance plan on a voluntary basis. The result of a voluntary system would be to leave without adequate protection the very groups whose plight the nation needs most to remedy in order to raise the country's level of health. He admits that health insurance is not an end in itself, but it is the best means that he can see for the attainment of certain objectives in health. A thorough system of prepaid government health insurance would in his opinion make five fundamental contributions to better health: (i) It would largely solve the individual's problem of paying for medical care, and thus help to encourage prompt care and preventive treatment. (ii) Because it creates a stable and assured financial basis for health services, it would generate effective demand and assure the fastest possible increase in the supply of medical manpower, health facilities and

other essentials in all parts of the country. (iii) Because insurance will pay for a patient's needs, doctors would be free to practise the highest quality of scientific medicine, uninhibited by the individual patient's ability to pay out of personal income for all the diagnostic and treatment services, hospitalization and nursing care which professional judgement prescribes. (iv) Because insurance will abolish most of the financial obstacles to receiving medical care and will help to equalize community purchasing power, it would reduce the present large disparities in distribution of manpower and health facilities between lower-income areas and wealthier districts. (v) Because national health insurance will furnish a new and badly needed opportunity for coordination of all community and regional personnel and facilities, it would help build a more effective organization for providing the best in prevention, diagnosis and treatment. Mr. Ewing then states six main arguments which have been raised against a system of government health insurance:

(i) That government health insurance is socialized or State medicine. (ii) That it is compulsory. (iii) That it would be highly centralized and would concentrate too much power in Federal Government. (iv) That there are not sufficient personnel and facilities to make it effective. (v) That it would cost too much. (vi) That it would open the way to over-use and other abuses and would lower the quality of medical services. He discusses each of these objections. He recognizes that government health insurance is a highly controversial subject, but he can see it as the only alternative to the maintenance of the *status quo* in medical practice. For this reason he recommends the President to urge on Congress the earliest possible enactment of a form of government health insurance. In the account of the National Health Assembly already mentioned it is stated that the majority of the representatives of the medical profession who were present could not agree with President Truman's views about compulsory sickness insurance. In these circumstances the medical world outside the United States will await the coming discussions and events with interest.

The fourth health goal mentioned by Mr. Ewing had to do with mental health—research, prevention and treatment of mental illness. The fifth goal was directed to the control of chronic diseases and to the relief of the other physical, mental and social problems of adult life. The sixth goal was concerned with the rehabilitation of men and women disabled by illness or accident. The seventh goal was to give every child a good start in life by a national plan of infant and maternal welfare. The eighth goal, to be attained by community action, was directed towards the organization of local agencies of health into effective teamwork for the welfare of the entire community. The ninth health goal may be quoted in full:

"To establish everywhere local health units with full-time qualified staffs adequate to the needs of the population; to increase and improve the training of public health workers to the end that their numbers shall be doubled as rapidly as feasible."

The final point made by Mr. Ewing is that health is not the private concern of a few individuals or a few institutions—it is everybody's business. This is true. It is also true that every individual must be concerned with his own health. If, as Mr. Ewing asserts, health is particularly the business of the patients, the people, who

must demand the best for themselves and for those dependent on them, it is equally the business of members of the medical profession to see that they get it.

Current Comment.

"PRIVATE ENTERPRISE OR GOVERNMENT IN MEDICINE."

As a contrast to the subject of this week's leading article attention is drawn to a book by Louis H. Bauer, recently published, and entitled "Private Enterprise or Government in Medicine".¹ Dr. Bauer is a member of the Board of Trustees of the American Medical Association and his book should be read by all who are interested in the relationship of governments to the practice of medicine.

It is pointed out that modern methods of investigation, modern hospitals, the expense of modern nursing, the cost of new drugs, have all contributed to the rising cost of medical care, but that these costs are strangely unreal in a community where it is estimated that the average American spends slightly more for his automobile per year than for medical care, slightly more for motion pictures and tobacco and nearly twice as much for alcoholic beverages.

Dr. Bauer deals with compulsory health insurance very fully. He examines the working of this system in Germany and in England and he also traces attempts to introduce a similar system into the United States. He points out that the term "compulsory health insurance" is a misnomer; that there is a vast difference between the provision of medical care and the maintenance of the health of the community. Where housing, sanitation, clothing and nutrition are inadequate, disease follows and the remedy lies in the economic field rather than in the medical field. In general, where compulsory health insurance is in operation, control is such that a single official of a lay group has the right to determine the character of the medical care and the method of payment, and the end result is a medical service which is cheap, mechanical and superficial.

In Germany the average incapacity *per annum* was 14 days in 1885. By 1939 the figure had risen to 24.6 and later became 28. There was no increase in preventive measures. Between 1928 and 1936 the death rate from diphtheria actually rose from 8.4 per 100,000 to 11.8. In the United States during the same period and with no national health insurance, the rate dropped from 9.2 to 1.5 per 100,000. In England conditions are similar. It is not unusual, Dr. Bauer asserts, for a panel doctor to see thirty patients per hour. In twenty years morbidity rate among the insurance class has doubled, malingering has been prevalent and the days lost in each year have been doubled. Medical costs have risen seventy times in forty years. The majority of people see the doctor not in order to obtain treatment for an illness, but to obtain a certificate for sick pay, and the doctor's main worry is not that of diagnosis and treatment, but how to fashion a certificate which will satisfy his patient and his conscience. National health insurance has not solved the problem of good health and the distribution of doctors. The whole trend has been towards hasty treatment. A premium is placed on treatment instead of on diagnosis and prevention, a third party comes between the patient and the doctor and the doctor is responsible to that third party and not to the patient.

In America a Committee on the Cost of Medical Care was appointed in 1927 and worked for five years. It produced two reports—the Majority Report and the Minority Report. The former recommended group practice, an extension of public health service and a system of health insurance which would eventually become com-

pulsory. This last recommendation was opposed by the American Medical Association. The Minority Report recommended that the Government keep out of the field of medical practice except for the indigent, and its recommendation was against a compulsory insurance plan. It, however, recommended the development of plans for medical care by State or county medical societies and it stated that an essential feature should be the direct payment by the patient of a certain minimum amount, the common fund providing only that portion beyond the patient's means. It also insisted that medical benefits must be separated from cash benefits.

Various attempts have been made in the United States to socialize the practice of medicine. In general, these plans are sponsored by the Democratic Party and opposed by the Republican Party. In 1939 and 1940 bills sponsored by Senator Wagner and others were introduced to provide compulsory national health insurance. They would have given to the Government control over doctors, hospitals, medical research and medical education. These features were largely endorsed by President Truman in his message to Congress in 1945. Although he emphasized that he was not out to socialize medicine, the American Medical Association pointed out that this result would inevitably follow, were his proposals accepted. Apparently the strange reluctance of politicians to admit the logic of this argument is not confined to Britain and Australia. No decision in this matter has yet been reached, but it appears that the views of the American Medical Association are gaining favour particularly with the Republicans. The American Medical Association pointed out that "voluntary prepayment plans now in operation in many parts of the U.S.A. and which are rapidly increasing in number will accomplish the main objects of the various Wagner bills with far less expense to the people and under these plans the public will receive the highest type of medical care without regimentation". It stated that 90% of United States doctors were opposed to any plan of compulsory national health insurance. It claimed that government control of medical services is the first step towards control of the people. It pointed out that England adopted compulsory health insurance in 1911 and is now socializing its public utilities and even the Bank of England. "Should we ever adopt socialised medicine in this country it will be the first step towards national socialism. The legal profession will follow, then the banks, then businesses and finally labour itself."

The voluntary insurance system is favoured by the American Medical Association. It enumerated ten principles governing all such schemes. These principles are very similar to those advocated by the Federal Council of the British Medical Association in Australia. Group hospital insurance on a voluntary basis very similar to that in vogue in New South Wales has enjoyed a similar success in the United States. Twenty-five million people are now covered. Medical society prepayment plans like those in New South Wales (again an extension of the voluntary hospital insurance plan) are making rapid headway. It has been found that the people are interested only in a cover for the so-called catastrophic type of illness, for example, surgery, obstetrics and medical care for cases sufficiently serious to need hospitalization. It is laid down by the American Medical Association that these plans must be under medical control, the doctor-patient relationship must be retained, schemes must be voluntary and there should be an income limit. The American Medical Association claims that there is no evidence that the people desire a different system of medical care. It suggests that of the whole population one group can well afford the cost of all medical care. The next group can take care of everything except catastrophic illness; this is a suitable group for hospital and voluntary medical care insurance. As regards the next group, the poorer classes and the indigent, it is suggested that the Government could well pay their insurance premiums and so provide them with the same facilities as the second group.

The national health plans of the American Medical Association are very similar to those of the profession in Australia.

¹"Private Enterprise or Government in Medicine", by Louis Hopewell Bauer, A.B., M.D., F.A.C.P.; 1948. Oxford: Blackwell Scientific Publications, Limited. Springfield: Charles C. Thomas. 9" x 7", pp. 212, with two illustrations. Price: 25s. net.

Abstracts from Medical Literature.

PÆDIATRICS.

Hæmatogenous Osteitis in Children.

W. M. DENNISON (*The Journal of Bone and Joint Surgery*, February, 1948) states that the aim of treatment of hæmatogenous osteitis in children is to control septicæmia and reduce tension in the local bone focus. The relief of tension serves the threefold purpose of easing pain, lessening absorption and preserving the blood supply of the bone. If the infecting organism is penicillin-sensitive, and penicillin therapy is instituted early, these objects should be achieved without surgical intervention. Unfortunately, however, the type of patient under consideration was seldom admitted to hospital until tension in the bone had caused irreversible bone change. The author considers that complete immobilization is necessary, but the limb must be available for inspection and it should not be enclosed in plaster during the first fourteen days of treatment. Immobilization was continued until radiographic examination showed sound consolidation, that is to say, from periods of two to eight months. Penicillin administration was started as soon as blood was withdrawn for culture. Latterly the dosage used has been 5000 units per pound body weight each twenty-four hours. Administration of penicillin was continued for twenty-one days or until the marrow was reported to be sterile (whichever was the longer). If pus was obviously present in soft tissues when the patient was admitted to hospital, general penicillin administration was started and the limb was immobilized. Pus was evacuated within twelve hours by aspiration or incision, such procedures being undertaken not more than one hour after an injection of penicillin so that a high level was present during the operation. After evacuation of pus, 50,000 to 100,000 units of penicillin were injected into the abscess cavity. If the bone was drilled, penicillin was instilled into the marrow cavity. All wounds were sutured in order to restore continuity of periosteum to avoid secondary infection with penicillin-insensitive organisms and to prevent the formation of penicillinase. Sometimes an indwelling rubber tube was inserted through which 100,000 units of penicillin were slowly instilled, the tube then being occluded by a spigot. Each day aspiration through the indwelling tube was attempted and 100,000 units were again instilled. The tube was usually removed on the fourth day; sequestrum formation did not occur in any cases in which sutures had been used, and all wounds healed by first intention. If, on admission to hospital, there was no evidence of pus formation in the tissues the limb was immobilized and general penicillin therapy instituted. If, however, pain, tenderness and signs of toxæmia were not relieved within forty-eight hours, operative treatment was undertaken in order to reduce the tension of pus under the periosteum. Bone drilling was seldom necessary. The authors consider that wound suture after the release of tension is the most important single step in preventing sequestrum

formation. Drilling should seldom be necessary, but less harm will be done by bone drilling followed by suture than by incomplete relief of tension. When pus is found under the periosteum, or in the soft tissues, it is clear that tension in the marrow cavity has already been relieved and bone drilling should be unnecessary. In a series of thirty cases there have been no deaths, no pathological fractures and no ankylosed joints. The average duration of stay in hospital was thirty-two days. In no case was there sinus formation. Complete consolidation of bone required periods varying from three to fourteen months, the average being five months.

Erb's Palsy.

B. WOLMAN (*Archives of Disease in Childhood*, June, 1948) reviews the 125 cases of Erb's palsy in patients who have attended the Royal Manchester Children's Hospital in the last twenty-one years. He states that the palsy is caused by injury at birth to the supra-clavicular portion of the brachial plexus. In the series large babies predominated, the average birth weight being eleven and a half pounds. The author points out that delivery of the large baby of a primigravida requires special care with the delivery of the head and arms. One conclusion from the survey that is stressed is the value of starting treatment at birth. Babies treated within the first month do uniformly well. If treatment is delayed contractures develop very quickly and cause impaired function of shoulder and elbow joints. Treatment consists of the application of a light metal splint with the shoulder abducted and externally rotated, the elbow flexed at a right angle and the forearm supinated. Massage and exercises are used. The latter can be used only as the child grows older, but coloured balls tied over the perambulator or cot encourage early active movement.

Adiposity in Childhood.

RAYMOND GREENE (*The Practitioner*, April, 1948) discusses the problem of obesity in childhood. He reviews the numerous theories that have been advanced to account for obesity, and debunks most of them. He states that it may arise from inactivity, over-eating and emotional immaturity. In many such cases, both in girls and boys, the fat has a "Fröhlich-like", "feminine" or "eunuchoid" distribution because of the absence of testicular secretion. The author is inclined to the view that obesity is often due to an abnormal function of the hypothalamic region. He dismisses the endocrine theories. There is no evidence to show that there is a disorder of any endocrine gland except perhaps the posterior lobe of the pituitary gland. He dismisses an anterior pituitary lack, the only possible example of anterior pituitary involvement being Cushing's syndrome, which is a hyperpituitary condition. He considers treatment by pituitary extract irrational and useless, for pituitary extracts have no potency when given by mouth and no commercial extract is effective even when given by injection. Thyroid deficiency does not cause obesity. Thyroid extract sometimes has a small part in early treatment because of its dehydrating effect, but apart from this it helps to reduce weight only when given in such dangerous doses as to cause temporary

thyreotoxicosis, which has been known to become permanent. He considers that water retention is an important factor in most, if not all, cases of obesity. Anxiety is a common cause of water retention in adults, and may be so in children too. He states that the majority of fat children grow into normal adults. They should be treated, however, for they may otherwise develop feelings of inferiority from the ridicule of their friends and their inability to excel at games. The treatment needed is a diet of low carbohydrate content, exercise and diuresis. The most satisfactory diuretic is urea, a teaspoonful in fruit drink three times a day. If there is hypogonadism, treatment with chorionic gonadotrophin, estrogens or androgens may help, but the general measures should not be omitted; such cases are rare.

Psychological Aspects of Asthma.

RUTH MORRIS BAKWIN AND HARRY BAKWIN (*The Journal of Pediatrics*, March, 1948) express regret at the state of mutual suspicion and reluctance to accept each other's role in the study of allergic conditions that so often exists between the allergist and the psychiatrist. They point out that emotion has been recognized since antiquity to play a part in producing the initial and subsequent attacks of asthma in some patients. The mother of the asthmatic child is often dominating and over-anxious and sometimes ambitious and lacking maternal affection. The asthmatic child is often overactive, irritable, alert, unreasonable, a poor sleeper and given to temper tantrums. The mother over-protects and coddles him, confines him to the house, and restricts his diet. Many of the children accept this excessive care and become over-dependent and unable to make decisions, immature and over-demanding. Some, however, resent it and become antagonistic and disobedient. Retardation in schoolwork is common, usually the result of repeated absences, and may result in poor emotional adjustment to school and increased behaviour difficulty. The authors advise that the mother's anxiety should be relieved and ill effects of over-indulgence made clear. Free activity and relaxation of supervision are important for the child; tension in the home should be removed.

The Oral Administration of Penicillin in Pediatrics.

J. H. MOSELEY (*Archives of Disease in Childhood*, June, 1948) describes an investigation into the value of penicillin given orally for infants. The first experiment consisted of giving a single large dose of 100,000 units orally and then intramuscularly, and observing the serum concentration of penicillin at hourly intervals. For the first three hours the level attained by intramuscular injection was much higher, but there was little difference during the subsequent five hours. The next problem was to find a method of oral administration that would ensure a sustained level of penicillin in the blood sufficient to deal with virulent infections by penicillin-sensitive organisms. The method used was to give an aqueous solution of a strength of 20,000 units per millilitre mixed with half an ounce of the feeding mixture immediately before each feed. It was felt that a sustained level of 0.04 unit of penicillin per millilitre in the serum

was desired. From observations on a considerable number of infants of various ages these conclusions were reached. The dosage required was, from birth to the age of six weeks, 20,000 units three-hourly or 30,000 units four-hourly; from six weeks to three months, 40,000 units three-hourly or 60,000 units four-hourly; from three to six months, 50,000 units three-hourly or 70,000 units four-hourly. Above the age of six months or after mixed feeding was introduced results were unreliable. If severe diarrhoea or frequent vomiting was present the method could not be used. A double dose is given before the last feed at night. The author concludes that penicillin may be administered orally to the infant below the age of six months as reliably as the sulphonamides, and that this is the route of choice in this age group. In older children the results are so unreliable that oral administration should not be used in any severe illness.

ORTHOPÆDIC SURGERY.

Cartilaginous-Cup Arthroplasty.

J. R. MOORE (*The Journal of Bone and Joint Surgery*, April, 1948) states that the technique of the cartilaginous-cup arthroplasty consists in removing the femoral head and reaming out the osseous portion until only a cartilaginous cup with a very thin layer of bone (one-eighth of an inch or less in thickness) remains. The cup then readily transmits light. A small section of the trochanter is elevated and reflected with its attachment to the *gluteus medius*. The end of the femur is then carefully rounded off with a cup reamer and the cartilaginous cup is fitted to it. The femur with its cartilaginous cup is then returned to the acetabulum, and the greater trochanter is reattached to the lateral aspect of the shaft, two or three inches below the cup level. The wound is carefully closed in layers, first the capsule, next the *vastus lateralis* and *gluteus medius* layer, then the *fascia lata*, the subcutaneous tissue, and the skin. A double hip spica is applied, extending from the ankle to the nipple line on the side being operated upon and from the knee to the nipple line on the other side. The extremity operated upon is in the maximum abduction, usually from 60° to 80°, with the patella pointing straight up. A minimum of 60° of abduction is essential. Occasionally an adductor tenotomy is required to obtain the desired abduction. Six weeks after operation the thigh which was not operated upon is released from the plaster spica. The hip spica on the side operated upon is removed at the beginning of the eighth week and balanced traction is applied in the line of abduction. The extremity is gradually brought down to the neutral position. Weight-bearing is permitted at the end of ten weeks. This procedure has been performed in 19 cases; 11 of the 19 patients have been followed from one to nine years and in nine of the cases the results are considered to be excellent. The majority of the patients complained of mild stiffness when they arose in the morning or after prolonged sitting.

Pressure at the Cervico-Brachial Junction.

E. D. TELFORD AND S. MOTTERSHED (*The Journal of Bone and Joint Surgery*, May, 1948) state that the

causes of pressure on the neurovascular bundle of the upper limb are many and varied. No one cause such as clavicular pressure can explain all cases. Costo-clavicular pressure is not possible when there is a normal first rib with a normal thoracic outlet, but it is certainly a factor when the costo-clavicular interval is narrowed by the presence of a large cervical rib or an abnormal first thoracic rib. Clavicular pressure can act only during retraction and abduction, not in depression of the shoulder. The authors believe that temporary alterations in the radial pulse with movements of the shoulder in normal individuals are due to causes distal to the clavicle and have no relation to costo-clavicular pressure. Whilst irritation of sympathetic nerve fibres may explain the majority of cases of thrombosis, there are others in which clotting occurs in an aneurysmal dilatation produced by pressure between the clavicle and the abnormal costal element. It is likely that the thrombosis occurs in an aneurysm which has been present for some length of time. The cause of the aneurysmal dilatation may be vasomotor paralysis of a segment of the artery, ending distally at a point where a fresh intact leash of nerves is relayed to the vessel. The authors state that the importance of the *scalenus anterior* syndrome has been over-emphasized. If operative treatment is limited in all cases to anterior scalenotomy the results will be disappointing. If operation is advised it should be performed without rigid and preconceived ideas, through an adequate incision, and with exploration wide enough to allow thorough investigation of the cause of pressure. In 105 uncomplicated cases the following causes of compression were found: pressure by fibrous band, twelve cases; abnormal disposition of scaleni, eight cases; cancellous osteoma, two cases; deformed thoracic outlet and pressure of clavicle on first rib, eight cases; no obvious cause found, five cases; cervical rib, seventy cases.

Fat Embolism.

P. H. NEWMAN (*The Journal of Bone and Joint Surgery*, May, 1948) states that fat embolism occurs in a high percentage of all cases of injury and that it is a relatively frequent complication of fractures of the long bones in civilian accidents as well as in battle casualties. Evidence is still conflicting as to whether the fat arises by embolism from an injured bone or by general metabolic disturbance. The fat is harmful not so much by reason of mechanical obstruction of vessels as by erosion and rupture of the vessel wall due to the liberation of fatty acids. Important points in diagnosis are a history of injury, usually fracture of a long bone or severe soft tissue damage, an interval in which there are no symptoms or signs suggesting complications, and failure to recover consciousness from an anaesthetic even though the general condition of the patient is good. Mental changes, such as failure to cooperate, restlessness, delirium, stupor, or deep coma, may occur. The degree of consciousness may vary from time to time. The temperature is usually raised to 102° F. or more. The blood pressure is normal or raised. Stertorous breathing, cyanosis, frothing at the mouth and moist sounds in the chest may be found. Petechial hæmorrhages, especially at the base of the neck and

in the conjunctival sac, are of diagnostic importance. The blood urea content is usually normal, and there is no suppression of urine. The author states that there is no specific treatment and that, when the condition has become established, very little can be done. Preventive treatment includes protection from long journeys over rough roads, and care to avoid unnecessary manipulation. The author has ligated the *profunda femoris* vein in two cases; one of the patients recovered and the other died. No conclusions can be drawn from two cases, but since the disease carries with it a high mortality and the operation is simple, it may be considered worthy of further consideration and trial.

Reconstruction of Bone Defects with Apposing Massive Bone Grafts.

JOHN J. FLANAGAN AND HENRY S. BUREM (*The Journal of Bone and Joint Surgery*, July, 1947) state that bone defects of the tibia and femur can be bridged successfully and bone length can be maintained by the use of apposing massive bone grafts. This conclusion is based on the proved integrity of the autogenous massive bone graft and on the fact that massive grafts, when placed in apposition at the site of a defect, become integral parts of each other as well as of the host bone itself. When these grafts are obtained from the affected bone, the complications associated with the removal of massive donor grafts from the opposite tibia are avoided, and normal functional use of the sound extremity is maintained. The authors consider that, with supplemental bone from the ilium, defects too great to be repaired with apposing massive grafts can be reconstructed successfully with a single stabilizing massive graft from the same bone, augmented by apposing iliac chips of blocks. Likewise, residual donor defects close more rapidly and completely when filled with iliac bone. The operative technique is described. The degree of success is in direct ratio to the physical condition of the patient and of the extremity. Intensive physical and occupational therapy are utilized before operation to mobilize the adjacent joints, improve circulation and muscle tone, and improve the physiology of the affected bone. Motion at the site of non-union is not harmful, inasmuch as the bone ends are embedded deeply in dense fibrous tissue. Among the 21 patients operated upon by the authors, there were sixteen successful end results, one refracture twelve months after operation, and four failures due to recurrence of the infection after operation. It was found possible to bridge bone defects, ranging up to two and a half inches in length, with apposing massive grafts. In defects greater than this, use of a single half-cylinder sliding graft with filling in of the opposite half of the defect with a block of iliac bone or with iliac bone chips is advocated. In the final analysis, successful bridging of defects with massive bone grafts depends on an adequate blood supply to the grafts and positive fixation of the grafts internally. By separation of the periosteum only at the site of the bone grafts to be removed, the periosteum and muscle attachments being left undisturbed on the sound portions of the shaft, an adequate blood supply is maintained for the revascularization of grafts.

British Medical Association News.

SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association was held on June 17, 1948, at the Royal North Shore Hospital of Sydney, Crow's Nest, New South Wales. The meeting took the form of a series of clinical demonstrations by members of the honorary medical staff of the hospital. Parts of this report appeared in the issues of November 27 and December 4, 1948.

Balanitis Xerotica Obliterans.

DR. C. H. WICKHAM LAWES presented a male patient, aged sixty-two years, suffering from *balanitis xerotica obliterans*. The patient's history was that in February, 1946, he had noticed tightness of the prepuce and whitening of the skin. At that time he could slip the foreskin back, but it had gradually become tighter. He had no difficulty in passing urine. The result of the Wassermann test was negative. Dr. Lawes pointed out that the condition was very uncommon. It might follow circumcision or a dorsal slit operation, but not necessarily. It was an obliterative, cicatricial sclerotic shrinking process involving the prepuce and glans. In circumcised patients it started at the operation site and extended on to the glans. In uncircumcised patients there was a constricting sclerotic band situated one to two centimetres from the distal end of the prepuce. Gradually increasing narrowing of the meatus, even to complete stenosis, was a constant feature. The condition was probably identical with *kraurosis penis*, and closely allied to *lichen sclerosus et atrophicus*. Treatment was directed mainly toward keeping the meatus adequately dilated. Circumcision could be carried out and sometimes caused improvement.

Fractured Pelvis.

DR. T. F. ROSE presented a male patient, aged seventeen years, who had been involved in a motor-cycle accident. On admission to hospital the patient was fully conscious. There was bruising over the right pubic bone, with excessive mobility of the pubic bones at the pubic symphysis and excessive mobility at the sacro-iliac joints. The right wrist was also swollen and tender. X-ray examination revealed much separation of the *symphysis pubis*, and sublimation of the right sacro-iliac joint, slight increase in the interval in the left sacro-iliac joint, and an impacted comminuted intra-articular Colles's fracture. Urine examination revealed only a very occasional red blood cell. At operation a closed reduction of the dislocation of the *symphysis pubis* was performed, with the patient lying on the left side, the Watson-Jones method being used. A plaster spica was then applied to include the pelvis and lower limbs to above the knees. The Colles's fracture was also reduced and immobilized. Intravenous therapy for shock and, post-operatively, penicillin were given. The patient was nursed in a left lateral position. Physiotherapy in the form of movements where required was also ordered. X-ray examination showed a considerable reduction in the *symphysis* interval, while the position of the Colles's fracture of the right wrist was satisfactory. An otherwise uneventful convalescence was interrupted by cellulitis under the lower jaw, and by a suprapubic furuncle. These lesions responded to local treatment and penicillin. Twelve days later, following renewal of the plaster and slight manipulation, X-ray examination showed a great improvement in the position of the right sacro-iliac joint, and only a slight opening up of the *symphysis pubis*. Convalescence was continuing.

Actinomycosis of the Right Cheek.

DR. ROSE's second patient was a boy, aged thirteen years, who fourteen days after the extraction of two lower teeth in February, 1948, had noticed a lump on the right cheek. As the lump became larger it became painful and more inflamed. The swelling persisted and finally burst, after treatment on April 25, 1948. A swabbing was taken from the lesion and sulphur granules were found on microscopic examination. The patient was admitted to hospital and penicillin, 15,000 units three-hourly by intramuscular injection, and potassium iodide, ten grains three times a day, were administered. The lesion rapidly responded to this therapy. The inflammation subsided and on the patient's discharge from hospital only a small amount of residual fibrosis remained at the site of the infection.

Atelectasis following Haemoptysis.

DR. C. G. BAYLISS presented a female patient, aged twenty-two years, who had been quite well until six weeks earlier

when she had had a sudden haemoptysis followed by some "staining" for two days. X-ray examination two days after onset of symptoms showed a cavity the size of a shilling in the left subapical region with only slight infiltration. The following day the patient commenced to run a temperature of 102° to 103° F. and looked ill; a dull percussion note and diminished air entry were detectable over the left lung. She was admitted to hospital five days after the haemoptysis with a temperature of 101.4° F., a pulse rate of 110 per minute, severe intermittent pain in the left side of the chest, and dyspnoea when lying still. She had deliberately suppressed any cough in case of further haemoptysis. She could not sit up without a severe paroxysm of coughing. On examination she had no cyanosis, and the respiratory rate was 24 per minute. The left side of the chest was immobile with a dull percussion note, absence of vocal fremitus and resonance, and almost complete absence of air entry with no accompaniments. The apex beat was only slightly displaced laterally. X-ray examination showed complete atelectasis of the left lung and a displaced heart. Bronchoscopic examination the following day showed blood clot completely blocking the left main bronchus and extending up into the trachea. This was aspirated with difficulty and immediate air entry followed. The patient showed immediate clinical improvement. X-ray examination three days later showed much clearing of the left lung and cavitation in the left infracavicular region with infiltration. An initial right artificial pneumothorax was induced nineteen days later. Adhesions were present holding the cavity out, but these were successfully divided two weeks later. The patient had at the time of the meeting good collapse of the lung and was afebrile. The sputum contained acid-fast bacilli.

Chyllothorax.

DR. BAYLISS then presented a male patient, aged eighteen years, who had been found to have pulmonary tuberculosis ten months previously, when radiologically examined as a contact. After sanatorium treatment for five months, artificial pneumothorax was induced at the end of March, and he was admitted to hospital for pneumonolysis at the end of April. At operation a considerable quantity of milky fluid was aspirated from the right pleural cavity. Nothing further was done. A diagnosis of tuberculous empyema was made. Blood examination revealed a haemoglobin content of 95%, a white blood cell count of 10,900 per cubic millimetre and a blood sedimentation rate of ten millimetres in one hour. X-ray examination after operation showed no sign of fluid in the pleural cavity. Chest aspiration a week later produced 28 ounces of milky fluid with a specific gravity of 1.018. Its reaction was alkaline and clearing of the milkiness occurred on its being shaken with ether and alkali. Microscopic examination revealed a moderate number of leucocytes, mainly lymphocytes, and some red blood cells. With the addition of Sudan III and examination under the oil immersion lens, fine granules not well stained were seen. Dark ground illumination showed myriads of regular fine granules 1 μ in size (chylomicrons). Biochemical examination showed the composition to be: total solids, 9.6%; total protein, 3.0%; total fat, 1.6%. The pathological report stated that the fluid was sterile on incubation for forty-eight hours. Cultural examination and guinea-pig inoculation for *Mycobacterium tuberculosis* were proceeding. The blood serum protein content was 7.6 grammes per 100 millilitres on June 3, 1948. A further blood count on June 7, 1948, showed a haemoglobin value of 104%, a white blood cell count of 6700 per cubic millimetre and a blood sedimentation rate of 18 millimetres in one hour. The patient's general condition had remained good. His weight had increased by seven pounds in the first two weeks and had remained constant since. He had been afebrile throughout. The right lung had reexpanded somewhat and the lesion had not altered. Weekly chest aspirations had been performed with an average yield of 20 ounces of fluid. The quantity diminished to 15 ounces on June 8, 1948. No acid-fast bacilli had been found in the sputum.

Miliary Tuberculosis.

DR. COTTER HARVEY presented a married woman patient, aged thirty years, who, following the birth of her baby on January 25, had had a "hectic" temperature and rapidly lost weight. She had very slight cough and clear sputum, and had some pain over the splenic area on respiration. Chest X-ray examination showed miliary studding over both lungs. X-ray examination of the hands showed no osseous lesions. The Mantoux reaction was given. On examination occasional scattered crepitations were found over both lungs; there was no splenic or glandular enlargement. The tubercle bacillus was not recovered by smear, cultivation or guinea-pig inoculation from numerous sputum tests and

gastric lavage. The administration of streptomycin was commenced on February 20, 1948, in a dosage of 0.5 gramme six-hourly. On March 19, 1948, this was reduced to 0.5 gramme once daily and it was suspended on May 20, 1948, after administration of a total of 92 grammes. The patient's temperature settled gradually, but occasionally rose to 99° or 100° F. up to the end of the course. She continued to lose weight, losing approximately 35 pounds from the beginning of her illness. The progress X-ray examinations showed improvement with the millary opacities becoming smaller and more discrete. The patient was discharged from hospital on May 21, 1948, for a further three months' bed rest at home, but she had since been readmitted two weeks after discharge with tuberculous meningitis.

Persistent Lactation.

DR. A. A. MOON presented two patients, each aged thirty-four years, with persistent lactation for twelve and a half years and five years respectively. One patient had had a second child without interruption of the persistent lactation. Both patients had continued to menstruate regularly, but the first patient had a scanty loss with her menstrual periods and the second patient had a reduced menstrual loss, the length of the period having dropped from seven days to two days. Pelvic examination in both cases showed no evident signs of utero-ovarian atrophy. Extensive treatment with oestrogens had had no inhibitory effect on lactation. Deep X-ray therapy to the ovaries and thyroid of one patient, and to the breast of the other patient, had had no effect on the condition of persistent lactation. Dr. Moon pointed out that it had long been recognized that mammary growth and function were under hormonal rather than nervous influences. The ovarian hormones, present in greatly increased amounts during pregnancy, were necessary for the development of the breasts, but inhibited the secretion of milk. The initiation and maintenance of lactation depended on a lactogenic hormone (prolactin) elaborated in the anterior lobe of the pituitary. It was presumed that the oestrogenic hormones inhibited lactation by inhibiting the anterior lobe of the pituitary. Uniformly successful results had been obtained with natural and synthetic oestrogens in inhibiting lactation and in the treatment of engorged breasts. In that respect it would appear that stilbestrol was more effective than other oestrogen preparations, and also was superior to testosterone propionate. Dr. Moon said that the association of persistent lactation with utero-ovarian atrophy of variable degree, and sometimes amenorrhoea, had been known for a century as Chiari's syndrome (1852) or Chiari and Frommel's disease (1882). Sharpe in 1935 had reviewed the literature and found only four papers on the subject. Gilbert in 1941 had described a patient with persistent lactation for sixteen years, with normal menses, and a uterus a little smaller than normal. Potter in 1944 had described a patient with Chiari's syndrome of seven years' duration; lactation then ceased, menstruation became reestablished and normal pregnancy and confinement ensued two years later. The two patients shown were not classical examples of Chiari and Frommel's disease because there was no definite evidence of utero-ovarian atrophy. It was to be noted, however, that menstrual loss was diminished in both cases and that Chiari and Frommel recognized the variable degree of genital atrophy in the condition.

An Unusual Toxaemia of Pregnancy.

Dr. Moon, in conjunction with Dr. O. ROBERTSON, then presented a married woman patient, aged thirty-five years, who had been admitted to hospital when four months pregnant with a history of progressive weakness and loss of weight (a total of one and a half stone) for two months with nausea and vomiting; pain in the lumbar region and both loins for three months; and frequency of micturition with dysuria. She had three children, the youngest aged three years, and had had "kidney trouble" with all pregnancies. She had been previously investigated at the hospital for hypertension and hirsutism. On examination she was extremely weak and emaciated; her urine contained a trace of albumin, but her blood pressure was not unduly high; apart from the signs of a sixteen weeks' pregnancy, a large fleshy polypus was found arising by a pedicle from the region of the external cervical os. The polypus was later removed and found to be benign. Intensive restorative treatment was given with some response, but the condition remained obscure. Evidence of pyramidal tract involvement was found and it was suggested that this might be due to metastases from a malignant lesion. Finally the diagnosis was made of toxæmia of pregnancy (atypical *hyperemesis gravidarum*), and the pregnancy was terminated by abdominal hysterotomy. No other abnormality was found in the abdomen at operation. After operation

the patient was given a diet with high protein and vitamin content and gradually brought back to normal diet. Secondary hemorrhage, pneumonia and pyelitis occurred during convalescence, but all responded to treatment, and slow but steady progress was made. It was pointed out that there were a number of interesting features about the case. The first was the fact that the patient could have allowed herself to decline into such an emaciated condition without seeking advice, owing possibly to the fact that she preferred to die rather than have another child. Her appearance was that of a patient in the last stages of malignant disease and at first it was thought that the cervical polypus was probably the primary growth. X-ray examination of bones and chest failed to show any secondary growth; no abdominal tumour could be felt other than the enlarged pregnant uterus. The patient was too ill for an opaque meal and X-ray examination. It was notable that the patient did not have the high blood pressure or blood urea content associated with severe toxæmia nor was there oedema. The vomiting was not severe and was not like that associated with severe toxæmia. At one stage there were signs of organic disease of the central nervous system, but these had cleared up. Diseases such as chorionic carcinoma and Addison's disease had entered into the early differential diagnosis. However, the patient had quite recovered, had gained two stone in weight and was carrying out her household duties.

Carcinoma of the Vulva.

DR. STUART STUDDY presented two patients who had had squamous-cell carcinoma of the vulva which was treated with vulvectomy and bilateral dissection of the superficial and deep inguinal and the femoral lymph glands. Dr. Studdy pointed out that carcinoma of the vulva was one of the less commonly occurring malignant growths of the genital tract. In the vast majority of cases the carcinoma was of the epidermoid type, and was usually a disease of later life. Pruritus was a constant symptom and had frequently been present for some years, often due to a preceding *leucoplakia vulvæ*. *Carcinoma vulvæ* might be associated with burning and pain. With regard to treatment, Dr. Studdy said that Taussig claimed a five-year cure rate of 52.6% in carcinoma of the vulva with metastases when treated by the Basset operation, which consisted of radical vulvectomy coupled with radical resection of the superficial glands and the femoral glands. The operation was usually performed in two stages, the vulvectomy being carried out first, followed in two or three weeks by the gland resection. X-ray therapy was considered to be of little or no value in the treatment. Dr. Studdy commented that both of the patients presented had had symptoms of *pruritus vulvæ* for some time, and both had been unsuccessfully treated with stilbestrol. That showed the necessity for early biopsy and treatment in all cases of suspicious leucoplakic areas on the vulva. Both patients were below the average age group for *carcinoma vulvæ*. In the first case lymph nodes palpable at operation were found to be inflammatory, whilst in the second case no lymph nodes were palpated at operation, but several glands showing evidence of metastatic invasion were found by the pathologist, which emphasized the necessity for radical dissection of the lymph glands in all cases of *carcinoma vulvæ*.

Tuberculous Salpingitis.

DR. R. H. MACDONALD presented a female patient, aged twenty-five years, who had been suffering from abdominal pain for one month, becoming worse in the few days before admission to hospital. A vaginal discharge present for six months had been copious for a month before she entered hospital. For three weeks she had been in bed and her evening temperature had always been over 100° F. She had undergone laparotomy in 1940 when a pelvic abscess considered tuberculous was found and drained; another pelvic abscess was drained at laparotomy in 1941, but no tubercle bacilli were found. In 1945 the patient had been found to have an active pulmonary tuberculous lesion, for which she received sanatorium treatment; tuberculous arthritis of the wrist had been treated by ankylosis. On examination tender masses were felt in both iliac fossæ and in both fornices *per vaginam*. A provisional diagnosis was made of bilateral salpingitis, probably of tuberculous origin. Apart from the finding of acid-fast bacilli in the urine on one occasion, investigations were not decisive. Symptoms persisted and each evening the temperature rose to 101° to 103° F. Occasionally twenty-four to forty-eight hours' relief from pain occurred. After twelve weeks' bed rest without improvement streptomycin 0.5 gramme twice a day by intramuscular injection was administered. Two days later the temperature was normal and remained within

ptosis had gradually disappeared, evidently as a result of sympathetic nerve activity, but the other signs of the left third nerve palsy had persisted. Dr. Stokes suggested that the hæmorrhage had originated as a result of the rupture of an atheromatous plaque in the left posterior communicating artery. He remarked that recovery in cases of subarachnoid hæmorrhage occurring in the sixth decade was not common, and residual involvement of the third nerve only on one side was most unusual.

Lymphatic Leuchæmia.

The second patient shown by Dr. Stokes was a man, aged sixty-one years, suffering from lymphatic leuchæmia. He had been admitted to hospital on January 31, 1948. At the time of his admission he complained of swelling on both sides of the neck, of fatigue and of aching of his legs. He had noticed enlarged glands under the armpits and in the groins for about twenty years.

On examination of the patient, it was seen that his general nutrition was good, but his facies was slightly paler than normal. Enlarged, firm, discrete and freely movable lymph nodes were present in both posterior cervical triangles, in the axillæ and in the inguinal regions. The lower margin of the liver was palpable about two inches below the right costal margin, and the edge of the spleen could be felt about two and a half inches below the left costal margin. Hyperkeratoses were present on both forearms and a squamous-celled epithelioma was seen on the posterior aspect of the neck. Examination of the blood revealed that the hæmoglobin content was 17 grammes per centum. The leucocytes numbered 180,000 per cubic millimetre, of which neutrophil cells comprised 2%, lymphocytes 68% and smudge cells 30%. The blood serum failed to react to either the Wassermann or the Kahn test; but the Mantoux test produced a positive result.

The epithelioma on the posterior aspect of the neck was successfully treated by means of deep X-ray therapy, and the patient, for whom small doses of *Liquor Arsenicalis* had been prescribed, was discharged from hospital late in February. Since his discharge his general condition had not deteriorated. Dr. Stokes said that the diagnosis was chronic lymphatic leuchæmia, and it appeared probable that the condition had been present for some time. He had shown this patient because, in spite of the serious blood dyscrasia, he was still able to carry on his work as a gardener.

Thyreotoxicosis Treated with Thioracil.

The last patient shown by Dr. Stokes was a middle-aged man suffering from thyreotoxicosis, who had been shown previously at the meeting held at Sydney Hospital in September, 1946. Since that time the patient had made good progress. He was free of symptoms, the thyreoid gland was just palpable and the pulse rate was 80 per minute. He had taken no methyl thioracil tablets for six months. In spite of his good general condition, the basal metabolic rate was +36%. The serum cholesterol content was 240 milligrammes per 100 millilitres.

Dr. Stokes said that it was proposed to repeat the estimation of the basal metabolic rate before ordering any further treatment, because the reading was out of proportion to the man's general condition.

Phonocardiograms.

Dr. Stokes finally demonstrated a series of phonocardiograms, comprising records of normal heart sounds, a mitral systolic murmur, a mitral diastolic murmur with pre-systolic accentuation, a "machinery" murmur from a patient with patent *ductus arteriosus*, an aortic to-and-fro murmur and presystolic gallop rhythm. He correlated the graphic representations with the actual sounds by means of gramophone recordings.

(To be continued.)

Correspondence.

Eales's Disease.

Sir: In the report of the discussion of Eales's disease and its treatment at the ophthalmological section of the Perth Congress, there is an error in the record of my remarks. It is due to a typographical error in the material forwarded for publication. The last sentence reads: "Great care was taken during set-up to see that the lens system was included in

the direct beam." The error is obvious, as the remarks above showed that the lens system must be protected. The sentence should read: "Great care was taken during set-up to see that the lens system was not included in the direct beam."

Yours, etc.,

R. KAY SCOTT.

105, Collins Street,
Melbourne, C.I.
November 18, 1948.

MASSIVE CARDIAC HYPERTROPHY.

Sir: In your issue of Saturday, November 20, in an article entitled "Massive Cardiac Hypertrophy", Dr. Joseph and Dr. Bauer state that none of the hearts hypertrophied due to unknown causes so far reported has exceeded 1000 grammes. They will probably be interested to know that J. C. Doane and N. J. Skversky (*American Heart Journal*, Volume XXVIII, 1944, page 816) have recorded the case of a heart weighing 1150 grammes in a male aged sixty-six. These authors could find no cause for the hypertrophy.

Yours, etc.,

MALCOLM FOWLER.

Pathology Department,
University of Adelaide,
Adelaide.
November 25, 1948.

NATIONAL MEDICAL SERVICE.

Sir: I should like to make some comment relevant to the proposed national medical service.

In my view there are at least four obnoxious factors inherent in acceptance of the Government's proposal to pay directly to doctors part of the patient's medical expenses.

1. Violation of professional secrecy. The ethics of this principle have been taught to medical students for centuries. Patients instinctively desire privacy in relation to disclosures made to their doctor. Now we are to have departmental officers—whether lay or professional makes no difference—prying into the private lives of our patients on the pretext of policing the Act to prevent fraudulent claims for service. What is happening to the standards of our profession, that such a suggestion for the elimination of the confidential doctor-patient relationship should receive even the most scant consideration?

2. General practitioners, at first, and no doubt later specialists are to be made willy-nilly into government employees. This 50% may soon grow into 100%, and we shall have sold our independence for a mess of pottage. From the payment of individual accounts to payment of a straight-out salary is a small step for any political party and so to the stultifying classification of the competence of doctors not by their ability but by the salary grade in which they are placed.

3. Schedule of fees. The recent referendum refused to the Federal Government the power of fixing prices for goods and services. For such a variety of services as are provided by doctors it is impossible to fix equitable fees, and the singling out of doctors for price fixing should be resisted most stubbornly. Any schedule agreed on at this stage will be outdated almost as soon as it is drawn up because of the spiralling cost of living. The solution for overcharging is a fees tribunal of the British Medical Association in each State to which accounts in dispute may be submitted for arbitration—as is done in Queensland in connexion with workers' compensation insurance.

4. Certification and form-filling. This is inescapable in dealing with any government department and would multiply exceedingly in the event of doctors becoming financially dependent on a department.

The idea of the Government to help people with their medical expenses is a good one in principle, and if the conscription of doctors into a government service is not also intended can quite easily be implemented in the following manner.

Let the patient pay his individual doctor as at present and then on presentation of his receipt to the Government be refunded 50%. In this way the patient would receive the intended benefit and we should remain clear of any entanglements. If the plea is made that this would be administratively unwieldy we could supply a list of paid accounts each month to the department which could then make the refund direct to the patient.

I agree that the Federal Council should appoint negotiators. However, as this is to be a general practitioner service, it is essential that these negotiators be representative general practitioners from city and country and from all States, and not specialist members of Council who know nothing first hand of general practice.

Let these negotiators discuss with the Government, not a schedule of fees 50% of which is to be paid to us by the Government, but the machinery of the Government's paying 50% of doctor's fees direct to the patient.

These negotiators must not be empowered to make any agreement, but the whole material of the discussions should be forwarded to all local associations and general practitioners for full examination. Then a plebiscite of all general practitioners should be taken on the final proposals.

Above all, let us not tolerate secret discussions and agreements which are presented to us in the form of a *fait accompli*.

Yours, etc.,

PETER R. DELAMOTHE, M.B., B.S.

Herbert Street,
Bowen,
Queensland.
November 24, 1948.

Congresses.

INTERNATIONAL CONGRESS ON RHEUMATISM.

THE seventh International Congress on Rheumatism will be held at New York from May 30 to June 4, 1949. Medical practitioners who desire to attend are invited to communicate with Dr. Boland, 2202, West Third Street, Los Angeles, California, United States of America, or with Dr. L. J. A. Parr, 135, Macquarie Street, Sydney.

Australian Medical Board Proceedings.

QUEENSLAND.

The following additional qualifications have been registered:

Pitt, Alan Turner Paul, 566, Logan Road, Greenslopes, Brisbane, D.L.O., R.C.P. and S. (England), 1948.
Row, Richard, c/o Dr. Val McDowall, 131, Wickham Terrace, Brisbane, Diploma in Diagnostic Radiology (Univ. Sydney), 1948.

Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Mathers, Peter, M.B., B.S., 1939 (Univ. Sydney), 73, Todman Avenue, Kensington.

Obituary.

ANTHONY BENEDICT CUNNINGHAM.

WE regret to announce the death of Dr. Anthony Benedict Cunningham, which occurred on November 30, 1948, at Hobart.

JOHN ADAMSON.

WE regret to announce the death of Dr. John Adamson, which occurred on November 28, 1948, at Melbourne.

Medical Appointments.

Dr. Stephen Grimwood Barr has been appointed a quarantine officer under the *Quarantine Act*, 1908-1947.

Diary for the Month.

- DEC. 14.—New South Wales Branch, B.M.A.: Ethics Committee, Medical Politics Committee.
DEC. 17.—Queensland Branch, B.M.A.: Council Meeting.
JAN. 5.—Western Australian Branch, B.M.A.: Council Meeting.
JAN. 10.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
JAN. 11.—New South Wales Branch, B.M.A.: Council Quarterly.
JAN. 13.—South Australian Branch, B.M.A.: Council Meeting.
JAN. 13.—Victorian Branch, B.M.A.: Organization Subcommittee.
JAN. 14.—Queensland Branch, B.M.A.: Council Meeting.
JAN. 17.—Victorian Branch, B.M.A.: Finance, House and Library Subcommittee.
JAN. 18.—New South Wales Branch, B.M.A.: Medical Politics Committee.
JAN. 20.—Victorian Branch, B.M.A.: Executive Meeting.
JAN. 26.—Victorian Branch, B.M.A.: Council Meeting.
JAN. 28.—Queensland Branch, B.M.A.: Council Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Ashmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phoenix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute; Brisbane City Council (Medical Officer of Health). Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Editorial Notices.

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